

Fortsetzung

1.

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 $([\perp]_{\perp}, \top_{\top}), ([\perp]_{\perp}, \top_{\top}))$   
 $([\perp]_{\perp}, \top_{\top}), ([\perp]_{\perp}, \top_{\top}))$   
 $([\perp]_{\perp}, \top_{\top}), ([\perp]_{\top}, \top_{\perp}))$   
 $([\perp]_{\perp}, \top_{\top}), ([\perp]_{\top}, \top_{\top}))$   
 $([\perp]_{\perp}, \top_{\top}), ([\perp]_{\top}, \top_{\perp}))$   
 $([\perp]_{\perp}, \top_{\top}), ([\perp]_{\top}, \top_{\top}))$



([1.1], [1.7], ([1.7], [1.1]))  
([1.1], [1.7], ([1.7], [1.7]))  
([1.1], [1.7], ([1.7], [1.7]))  
([1.1], [1.7], ([1.1], [1.1]))  
([1.1], [1.7], ([1.1], [1.7]))  
([1.1], [1.7], ([1.1], [1.7]))  
([1.1], [1.7], ([1.7], [1.1]))  
([1.1], [1.7], ([1.7], [1.7]))  
([1.1], [1.7], ([1.7], [1.7]))  
([1.1], [1.7], ([1.7], [1.1]))  
([1.1], [1.7], ([1.7], [1.7]))  
([1.1], [1.7], ([1.7], [1.7]))  
([1.1], [1.7], ([1.1], [1.1]))  
([1.1], [1.7], ([1.1], [1.7]))  
([1.1], [1.7], ([1.7], [1.1]))  
([1.1], [1.7], ([1.7], [1.7]))  
([1.1], [1.7], ([1.7], [1.7]))  
([1.1], [1.7], ([1.7], [1.1]))  
([1.1], [1.7], ([1.7], [1.7]))  
([1.1], [1.7], ([1.7], [1.7]))  
([1.1], [1.7], ([1.1], [1.1]))  
([1.1], [1.7], ([1.1], [1.7]))  
([1.1], [1.7], ([1.1], [1.7]))  
([1.1], [1.7], ([1.1], [1.7]))  
([1.1], [1.7], ([1.1], [1.7]))  
([1.1], [1.7], ([1.7], [1.1]))





$$([\perp, \top, \top, \top], ([\perp, \perp], [\top, \perp]))$$
$$([\perp, \top, \top, \top], (\perp, \perp, \top, \top))$$
$$([\perp, \top, \top, \top], ([\perp, \perp, \top, \top]))$$
$$([\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \perp])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp, \top, \top, \top], ([\perp, \top, \top, \top]))$$
$$([\perp, \top, \top, \top], (\perp, \top, \top, \perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \perp])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \bot, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top]))$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \bot, \top \cdot \perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\sqcup, \sqcap, \sqcup, \sqcap], [\sqcup, \sqcap, \sqcup, \sqcap])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \bot, \top \cdot \bot])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \bot, \top \cdot \perp])$$





[illegible]

[illegible]













$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\perp, \top, \top, \perp), (\perp, \perp, \top, \top))$$
$$((\lceil \cdot \rceil, \rceil \cdot \rfloor), (\lceil \cdot \rfloor, \rceil \cdot \lceil))$$
$$((\sqcup, \sqcap, \sqcap.\sqcup), (\sqcup.\sqcup, \sqcap.\sqcap))$$
$$((\perp \cdot \top, \top \cdot \perp), (\perp \cdot \top, \top \cdot \perp))$$
$$((\perp \cdot \top, \top \cdot \perp), (\perp \cdot \top, \top \cdot \top))$$
$$((\perp \cdot \top, \top \cdot \perp), (\perp \cdot \top, \top \cdot \top))$$
$$((\perp, \top, \top, \perp), (\perp, \top, \top, \perp))$$
$$((\perp, \top, \top, \perp), (\perp, \top, \top, \perp))$$
$$((\lceil \cdot \rceil, \rceil \cdot \rfloor), (\lceil \cdot \rfloor, \rceil \cdot \lceil))$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$((\perp \cdot \top, \top \cdot \perp), (\perp \cdot \top, \top \cdot \perp])$$
$$((\perp \cdot \top, \top \cdot \perp), (\perp \cdot \top, \top \cdot \top])$$
$$((\perp \cdot \top, \top \cdot \perp), (\perp \cdot \top, \top \cdot \top])$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$((\lceil \cdot \rceil, \rceil \cdot \rfloor), (\lceil \cdot \rfloor, \rceil \cdot \lceil \rceil))$$
$$((\perp, \top, \top, \perp), (\perp, \top, \top, \perp))$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), [\lceil \cdot \rceil, \lceil \cdot \rceil])$$
$$((\sqcup, \sqcap, \sqcap, \sqcup), [\sqcup, \sqcup, \sqcap, \sqcap])$$

$((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\top))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\perp))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\top))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\top))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\top, \Gamma.\perp))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\top, \Gamma.\top))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\top, \Gamma.\top))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\perp])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\top])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\top])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\perp])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\top])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\top])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\top, \Gamma.\perp])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\top, \Gamma.\top])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\top, \Gamma.\top])$   
 $((\perp \cdot \Gamma, \Gamma.\top), (\perp.\perp, \Gamma.\perp))$   
 $((\perp \cdot \Gamma, \Gamma.\top), (\perp.\perp, \Gamma.\top))$   
 $((\perp \cdot \Gamma, \Gamma.\top), (\perp.\perp, \Gamma.\top))$   
 $((\perp \cdot \Gamma, \Gamma.\top), (\perp \cdot \Gamma, \Gamma.\perp))$   
 $((\perp \cdot \Gamma, \Gamma.\top), (\perp \cdot \Gamma, \Gamma.\top))$   
 $((\perp \cdot \Gamma, \Gamma.\top), (\perp \cdot \Gamma, \Gamma.\top))$   
 $((\perp \cdot \Gamma, \Gamma.\top), (\perp.\top, \Gamma.\perp))$   
 $((\perp \cdot \Gamma, \Gamma.\top), (\perp.\top, \Gamma.\top))$   
 $((\perp \cdot \Gamma, \Gamma.\top), (\perp.\top, \Gamma.\top))$



$((\perp, \top, \top, \top), [\perp, \top, \top, \top])$   
 $((\perp, \top, \top, \top), [\perp, \top, \top, \top])$   
 $((\perp, \top, \top, \top), (\perp, \perp, \top, \perp))$   
 $((\perp, \top, \top, \top), (\perp, \perp, \top, \top))$   
 $((\perp, \top, \top, \top), (\perp, \perp, \top, \top))$   
 $((\perp, \top, \top, \top), (\perp, \top, \top, \perp))$   
 $((\perp, \top, \top, \top), (\perp, \top, \top, \top))$   
 $((\perp, \top, \top, \top), (\perp, \top, \top, \top))$   
 $((\perp, \top, \top, \top), (\perp, \top, \top, \perp))$   
 $((\perp, \top, \top, \top), (\perp, \top, \top, \top))$   
 $((\perp, \top, \top, \top), (\perp, \top, \top, \top))$   
 $((\perp, \top, \top, \top), (\perp, \perp, \top, \perp))$   
 $((\perp, \top, \top, \top), (\perp, \perp, \top, \top))$   
 $((\perp, \top, \top, \top), (\perp, \perp, \top, \top))$   
 $((\perp, \top, \top, \top), (\perp, \top, \top, \perp))$   
 $((\perp, \top, \top, \top), (\perp, \top, \top, \top))$   
 $((\perp, \top, \top, \top), (\perp, \top, \top, \top))$   
 $((\perp, \top, \top, \top), (\perp, \top, \top, \perp))$   
 $((\perp, \top, \top, \top), (\perp, \top, \top, \top))$   
 $((\perp, \top, \top, \top), [\perp, \perp, \top, \perp])$   
 $((\perp, \top, \top, \top), [\perp, \perp, \top, \top])$   
 $((\perp, \top, \top, \top), [\perp, \perp, \top, \top])$   
 $((\perp, \top, \top, \top), [\perp, \top, \top, \perp])$   
 $((\perp, \top, \top, \top), [\perp, \top, \top, \top])$



$$\begin{aligned}
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\perp)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\perp)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\perp, \top.\perp)) \\
& ((\perp.\top, \top.\perp), (\perp.\perp, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\perp, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\perp)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\perp)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\perp, \top.\perp)) \\
& ((\perp.\top, \top.\perp), (\perp.\perp, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\perp, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\perp)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\perp)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\top, \top.\top)) \\
& ((\perp.\top, \top.\perp), (\perp.\perp, \top.\perp))
\end{aligned}$$



$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\perp, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp])$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top])$





$((\perp . \perp , \top . \perp ), (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \perp ), (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \perp ), (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \perp ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \perp ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \perp ), (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \perp ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$







$((\perp . \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp.\Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp.\Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp.\Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp.\top, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp.\top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp.\top, \Gamma.\top))$

$((\perp . \Gamma, \Gamma . \Pi, (\perp . \Delta, \Gamma . \Delta))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \Delta, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \Delta, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \Gamma, \Gamma . \Delta))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \Gamma, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \Gamma, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \neg, \Gamma . \Delta))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \neg, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Delta, \Gamma . \Delta]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Delta, \Gamma . \Gamma]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Delta, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \Delta]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \Gamma]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \Delta]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \Gamma]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Delta, \Gamma . \Delta]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Delta, \Gamma . \Gamma]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Delta, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \Delta]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \Gamma]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \Delta]))$

$((\perp, \top, \top, \top], [\perp, \top, \top, \top])$   
 $((\perp, \top, \top, \top], [\perp, \top, \top, \top])$   
 $((\perp, \top, \top, \top], (\perp, \perp, \top, \perp))$   
 $((\perp, \top, \top, \top], (\perp, \perp, \top, \top))$   
 $((\perp, \top, \top, \top], (\perp, \perp, \top, \top))$   
 $((\perp, \top, \top, \top], (\perp, \top, \top, \perp))$   
 $((\perp, \top, \top, \top], (\perp, \top, \top, \top))$   
 $((\perp, \top, \top, \top], (\perp, \top, \top, \perp))$   
 $((\perp, \top, \top, \top], (\perp, \top, \top, \top))$   
 $((\perp, \top, \top, \top], (\perp, \top, \top, \top))$   
 $((\perp, \top, \top, \top], (\perp, \perp, \top, \perp])$   
 $((\perp, \top, \top, \top], (\perp, \perp, \top, \top])$   
 $((\perp, \top, \top, \top], (\perp, \perp, \top, \top])$   
 $((\perp, \top, \top, \top], (\perp, \top, \top, \perp])$   
 $((\perp, \top, \top, \top], (\perp, \top, \top, \top])$   
 $((\perp, \top, \top, \top], (\perp, \top, \top, \perp])$   
 $((\perp, \top, \top, \top], (\perp, \top, \top, \top])$   
 $((\perp, \top, \top, \top], [\perp, \perp, \top, \perp])$   
 $((\perp, \top, \top, \top], [\perp, \perp, \top, \top])$   
 $((\perp, \top, \top, \top], [\perp, \perp, \top, \top])$   
 $((\perp, \top, \top, \top], [\perp, \top, \top, \perp])$   
 $((\perp, \top, \top, \top], [\perp, \top, \top, \top])$



((⌊.7, ⌈.⌋], (⌊.7, ⌈.⌋])  
((⌊.7, ⌈.⌋], (⌊.7, ⌈.7])  
((⌊.7, ⌈.⌋], (⌊.7, ⌈.7])  
((⌊.7, ⌈.⌋], (⌊.7, ⌈.⌋])  
((⌊.7, ⌈.⌋], (⌊.7, ⌈.7])  
((⌊.7, ⌈.⌋], (⌊.7, ⌈.7])  
((⌊.7, ⌈.⌋], [⌊.⌋, ⌈.⌋))  
((⌊.7, ⌈.⌋], [⌊.⌋, ⌈.7])  
((⌊.7, ⌈.⌋], [⌊.⌋, ⌈.7])  
((⌊.7, ⌈.⌋], [⌊.7, ⌈.⌋))  
((⌊.7, ⌈.⌋], [⌊.7, ⌈.7])  
((⌊.7, ⌈.⌋], [⌊.7, ⌈.7])  
((⌊.7, ⌈.⌋], [⌊.7, ⌈.⌋))  
((⌊.7, ⌈.⌋], [⌊.7, ⌈.7])  
((⌊.7, ⌈.⌋], [⌊.⌋, ⌈.⌋])  
((⌊.7, ⌈.⌋], [⌊.⌋, ⌈.7])  
((⌊.7, ⌈.⌋], [⌊.⌋, ⌈.7])  
((⌊.7, ⌈.⌋], [⌊.7, ⌈.⌋])  
((⌊.7, ⌈.⌋], [⌊.7, ⌈.7])  
((⌊.7, ⌈.⌋], [⌊.7, ⌈.7])  
((⌊.7, ⌈.⌋], [⌊.7, ⌈.7])  
((⌊.7, ⌈.7], (⌊.⌋, ⌈.⌋))



((א.ה, ב.ב), (א.ה, ב.ב))  
 ((א.ה, ב.ב), (א.א, ב.א))  
 ((א.ה, ב.ב), (א.א, ב.ב))  
 ((א.ה, ב.ב), (א.א, ב.ה))  
 ((א.ה, ב.ב), (א.ב, ב.א))  
 ((א.ה, ב.ב), (א.ב, ב.ב))  
 ((א.ה, ב.ב), (א.ב, ב.ה))  
 ((א.ה, ב.ב), (א.ה, ב.א))  
 ((א.ה, ב.ב), (א.ה, ב.ב))  
 ((א.ה, ב.ב), (א.ה, ב.ה))  
 ((א.ה, ב.ה), (א.א, ב.א))  
 ((א.ה, ב.ה), (א.א, ב.ב))  
 ((א.ה, ב.ה), (א.א, ב.ה))  
 ((א.ה, ב.ה), (א.ב, ב.א))  
 ((א.ה, ב.ה), (א.ב, ב.ב))  
 ((א.ה, ב.ה), (א.ב, ב.ה))  
 ((א.ה, ב.ה), (א.ה, ב.א))  
 ((א.ה, ב.ה), (א.ה, ב.ב))  
 ((א.ה, ב.ה), (א.ה, ב.ה))  
 ((א.ה, ב.ה), (א.א, ב.א))  
 ((א.ה, ב.ה), (א.א, ב.ב))  
 ((א.ה, ב.ה), (א.א, ב.ה))  
 ((א.ה, ב.ה), (א.ב, ב.א))  
 ((א.ה, ב.ה), (א.ב, ב.ב))  
 ((א.ה, ב.ה), (א.ב, ב.ה))











$$([\perp.\perp], [\top.\top]), [\perp.\top], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), [\perp.\top], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), [\perp.\top], [\top.\top])$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \rceil \cdot \rfloor), (\lceil \cdot \rfloor, \rceil \cdot \lceil)$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
 $([\perp \cdot \Gamma, \Gamma \cdot \perp], [\perp \cdot \Gamma, \Gamma \cdot \Gamma])$ 
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
 $([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$ 
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$([\perp \cdot \top, \top \cdot \perp]), ([\perp \cdot \perp, \top \cdot \perp])$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$([\perp \cdot \top, \top \cdot \perp]), ([\perp \cdot \perp, \top \cdot \top])$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil]$$
$$([\perp \cdot \top, \top \cdot \perp]), ([\perp \cdot \top, \top \cdot \top])$$
 $([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \top])$ 
$$([\perp, \top, \top, \perp]), ([\perp, \top, \top, \perp])$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$([\perp \cdot \top, \top \cdot \perp]), ([\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \perp, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \perp, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \perp, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp \cdot \Gamma, \Gamma \cdot \perp), [\perp \cdot \Gamma, \Gamma \cdot \Gamma))$$

$([\perp, \Gamma, \Gamma.\perp], [\perp, \Gamma, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\Gamma, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\Gamma, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\Gamma, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\top, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\top, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\top, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\top))$







$([1, 7], [1, 1]), ([1, 7], [1, 1])$   
 $([1, 7], [1, 1]), ([1, 7], [1, 7])$   
 $([1, 7], [1, 1]), ([1, 7], [1, 7])$   
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 $([1, 7], [1, 7]), ([1, 1], [1, 7])$   
 $([1, 7], [1, 7]), ([1, 1], [1, 7])$   
 $([1, 7], [1, 7]), ([1, 7], [1, 1])$





$([1, 7], [7, 7]), [1, 1], [7, 1])$   
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 $([1, 7], [7, 7]), [1, 1], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 1])$   
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 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
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 $([1, 1], [7, 1]), ([1, 1], [7, 1])$   
 $([1, 1], [7, 1]), ([1, 1], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 1], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 1])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 1])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 1])$



$$([\bot.\bot, \top.\bot], [\bot.\top, \top.\top])$$
$$([\bot.\bot, \top.\bot], [\bot.\top, \top.\bot])$$
$$([\perp, \cdot], [\cdot, \perp], [\perp, \cdot], [\cdot, \perp])$$
$$([\bot.\bot, \top.\bot], [\bot.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top], ([\perp.\perp], [\top.\top]))$$
$$([\perp.\perp], [\top.\top], ([\perp.\perp], [\top.\top]))$$
$$([\perp.\perp], [\top.\top], ([\perp.\perp], [\top.\top]))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil, (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
$$([\perp \cdot \perp, \top \cdot \top], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp.\perp], [\top.\top], (\perp.\top, \top.\perp))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil, (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$([\perp.\perp], [\top.\top], (\perp.\top, [\top.\top]))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil, (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$([\perp.\perp], [\top.\top], ([\perp.\perp], [\top.\perp]))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil)$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top], ([\perp.\top], [\top.\perp]))$$
$$([\perp.\perp], [\top.\top]), ([\perp.\top], [\top.\top])$$
 $([\perp.\perp], [\top.\top], [\perp.\top], [\top.\perp])$ 
$$([\perp.\perp], [\top.\top], [\perp.\top], [\top.\perp])$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$([\perp.\perp], [\top.\top], [\perp.\top], [\top.\perp])$$
$$([\perp.\perp, \top.\top], [\perp.\perp, \top.\perp]))$$
$$([\perp, \cdot], [\cdot, \top], [\perp, \cdot], [\cdot, \top])$$
$$([\perp.\perp, \top.\top], [\perp.\perp, \top.\top]))$$





[illegible]

$([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\perp])$

$$\begin{aligned}
& ([\perp, \top, \top, \top], [\perp, \top, \top, \top]) \\
& ([\perp, \top, \top, \top], [\perp, \top, \top, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \top, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \top, \top]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \top, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \bot, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \bot, \top]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \bot, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \top, \top, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \top, \top, \top]) \\
& ([\perp, \top, \top, \top], [\perp, \top, \top, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \top, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \top, \top]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \bot, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \bot, \top]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \bot, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \bot, \top]) \\
& ([\perp, \top, \top, \top], [\perp, \top, \top, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \top, \top, \top]) \\
& ([\perp, \top, \top, \top], [\perp, \top, \top, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \top, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \top, \top]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \bot, \bot]) \\
& ([\perp, \top, \top, \top], [\perp, \bot, \bot, \top])
\end{aligned}$$





[illegible]

([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))



$([1, 7], [7, 1], [1, 1], [7, 7])$

$([1, 7], [7, 1], [1, 1], [7, 7])$

$([1, 7], [7, 1], [1, 7], [7, 1])$

$([1, 7], [7, 1], [1, 7], [7, 7])$

$([1, 7], [7, 1], [1, 7], [7, 7])$

$([1, 7], [7, 1], [1, 7], [7, 1])$

$([1, 7], [7, 1], [1, 7], [7, 7])$

$([1, 7], [7, 1], [1, 7], [7, 7])$

$([1, 7], [7, 1], [1, 1], [7, 1])$

$([1, 7], [7, 1], [1, 1], [7, 7])$

$([1, 7], [7, 1], [1, 1], [7, 7])$

$([1, 7], [7, 1], [1, 7], [7, 1])$

$([1, 7], [7, 1], [1, 7], [7, 7])$

$([1, 7], [7, 1], [1, 7], [7, 7])$

$([1, 7], [7, 1], [1, 7], [7, 1])$

$([1, 7], [7, 1], [1, 7], [7, 7])$

$([1, 7], [7, 1], [1, 7], [7, 7])$

$[7, 7]^{67} . (([1, 7], [7, 7]), ([1, 1], [7, 7]))$

$(([1, 1], [7, 1]), ([1, 1], [7, 1]))$

$(([1, 1], [7, 1]), ([1, 1], [7, 7]))$

$(([1, 1], [7, 1]), ([1, 1], [7, 7]))$

$(([1, 1], [7, 1]), ([1, 7], [7, 1]))$

$(([1, 1], [7, 1]), ([1, 7], [7, 7]))$

$(([1, 1], [7, 1]), ([1, 7], [7, 7]))$

$(([1, 1], [7, 1]), ([1, 7], [7, 1]))$









[illegible]







$((\perp, \top, \top), [\perp, \perp, \top])$

$((\perp, \top, \top), [\perp, \perp, \top])$

$((\perp, \top, \top), [\perp, \perp, \top])$

$((\perp, \top, \top), [\perp, \top, \perp])$

$((\perp, \top, \top), [\perp, \top, \top])$

$((\perp, \top, \top), [\perp, \top, \top])$

$((\perp, \top, \top), [\perp, \top, \perp])$

$((\perp, \top, \top), [\perp, \top, \top])$

$((\perp, \top, \top), [\perp, \top, \top])$

$((\perp, \top, \perp), (\perp, \perp, \top))$

$((\perp, \top, \perp), (\perp, \perp, \top))$

$((\perp, \top, \perp), (\perp, \perp, \top))$

$((\perp, \top, \perp), (\perp, \top, \perp))$

$((\perp, \top, \perp), (\perp, \top, \top))$

$((\perp, \top, \perp), (\perp, \top, \top))$

$((\perp, \top, \perp), (\perp, \top, \perp))$

$((\perp, \top, \perp), (\perp, \top, \top))$

$((\perp, \top, \perp), (\perp, \top, \top))$

$((\perp, \top, \perp), (\perp, \perp, \perp))$

$((\perp, \top, \perp), (\perp, \perp, \top))$

$((\perp, \top, \perp), (\perp, \perp, \top))$

$((\perp, \top, \perp), (\perp, \top, \perp))$

$((\perp, \top, \perp), (\perp, \top, \top))$

$((\perp, \top, \perp), (\perp, \top, \top))$

$((\perp, \top, \perp), (\perp, \top, \perp))$





$((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), [\perp.\perp, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\perp, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\perp])$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$











$((\perp . \Gamma, \Gamma . \Pi), (\perp . \Gamma, \Gamma . \Pi))$   
 $((\perp . \Gamma, \Gamma . \Pi), (\perp . \Gamma, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Pi), (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Pi), (\perp . \neg, \Gamma . \Pi))$   
 $((\perp . \Gamma, \Gamma . \Pi), (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \neg, \Gamma . \Pi])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \Gamma, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \Gamma, \Gamma . \Pi])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \Gamma, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \neg, \Gamma . \Pi])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \Gamma, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \Gamma, \Gamma . \Pi])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \Gamma, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \neg, \Gamma . \Pi])$   
 $((\perp . \Gamma, \Gamma . \Pi), [\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \neg], (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \neg], (\perp . \neg, \Gamma . \Pi))$



((⌊.Γ, Γ.Γ], [⌊.⌊, Γ.⌊])  
((⌊.Γ, Γ.Γ], [⌊.⌊, Γ.Γ])  
((⌊.Γ, Γ.Γ], [⌊.⌊, Γ.Γ])  
((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.⌊])  
((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.⌊])  
((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.⌊))  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.⌊))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.⌊))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.⌊])  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.⌊])  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.⌊])











$$([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$$
$$([\bot.\bot, \top.\bot], [\bot.\top, \top.\top])$$
$$([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil)$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor)$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor)$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil)$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$([\perp \cdot \perp, \top \cdot \top], ([\perp \cdot \perp, \top \cdot \perp]))$$
$$([\perp \cdot \perp, \top \cdot \top], [\perp \cdot \perp, \top \cdot \top])$$
$$([\perp, \cdot], \vdash, \vdash), ([\perp, \cdot], \vdash, \vdash)$$
$$([\perp \cdot \perp, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp \cdot \perp], [\top \cdot \top]), ([\perp \cdot \top], [\top \cdot \top])$$
$$([\perp \cdot \perp], [\top \cdot \top]), ([\perp \cdot \top], [\top \cdot \perp])$$
$$([\perp.\perp], [\top.\top]), ([\perp.\top], [\top.\perp])$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil]$$
$$(\llbracket \cdot \rrbracket, \vdash, \vdash), (\llbracket \cdot \rrbracket, \vdash, \vdash))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\perp]))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$



$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_-)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_+, [1]_-, [1]_-)$

$([1]_-, [1]_-, [1]_+), ([1]_+, [1]_-, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_+, [1]_+, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_-, [1]_-)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_-, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_-)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_+, [1]_-, [1]_-)$

$([1]_-, [1]_-, [1]_+), ([1]_+, [1]_-, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_+, [1]_+, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_-, [1]_-)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_-, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_-)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_+, [1]_-, [1]_-)$

$([1]_-, [1]_-, [1]_+), ([1]_+, [1]_-, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_+, [1]_+, [1]_+)$

$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_-, [1]_-)$



([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )

$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \perp]))$$
$$([\perp, \top, \top, \top], [\perp, \perp, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top), [\perp \cdot \top, \top \cdot \perp]))$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top), [\perp \cdot \top, \top \cdot \top))$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \bot, \top \cdot \bot])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \perp])$$
$$([\sqcup, \sqcap, \sqcap, \sqcap], [\sqcup, \sqcup, \sqcap, \sqcap])$$
$$([\sqcup \cdot \sqcap, \sqcap \cdot \sqcap], [\sqcup \cdot \sqcup, \sqcap \cdot \sqcup])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lfloor \cdot \rfloor, \lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
 $([\cdot], [\cdot], [\cdot]), ([\cdot], [\cdot], [\cdot])$ 
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lfloor \cdot \rfloor, \lceil \cdot \rceil)$$
$$([\perp, \top, \top, \top]), ([\perp, \top, \top, \perp])$$

[illegible]

([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )









[illegible]

$([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \Gamma, \perp))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \Gamma, \Gamma))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \Gamma, \neg))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \Gamma, \Gamma, \perp))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \Gamma, \Gamma, \Gamma))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \Gamma, \Gamma, \neg))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \Gamma, \perp))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \Gamma, \Gamma))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \Gamma, \neg))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \Gamma, \perp])$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \Gamma, \Gamma])$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \Gamma, \neg])$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \Gamma, \perp])$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \Gamma, \Gamma])$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \Gamma, \neg])$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \neg, \perp])$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \neg, \Gamma])$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \neg, \neg])$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \neg, \perp))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \neg, \Gamma))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\perp}, \neg, \neg))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \neg, \perp))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \neg, \Gamma))$   
 $([\perp]_{\perp}, \Gamma, \Gamma], [\perp]_{\neg}, \neg, \neg))$





$([\perp, \Gamma, \Gamma.\perp], [\perp, \Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp, \Gamma, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp, \Gamma, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\Gamma])$   
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[illegible]



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 $([1, 7], [1, 2], [1, 7], [1, 7])$   
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 $([1, 7], [1, 7], [1, 7], [1, 7])$



[illegible]

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$([1.7], [1.7], [1.7], [1.7])$

$([1.7], [1.7], [1.7], [1.7])$

$([1.7], [1.7], [1.7], [1.7])$

$([1.7], [1.7], [1.7], [1.7])$













$((\perp . \Gamma, \Gamma . \Gamma), (\perp . \neg, \neg . \neg))$   
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 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \neg . \Gamma])$   
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 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \neg . \Gamma])$   
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 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \neg . \neg])$   
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 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \neg . \neg])$   
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 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \neg . \neg))$

((⌊.Γ,Γ.Γ), (⌊.Γ,Γ.⌊))  
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((⌊.Γ,Γ.Γ), [⌊.Γ,Γ.Γ))  
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((⌊.Γ,Γ.Γ), [⌊.Γ,Γ.Γ))  
((⌊.Γ,Γ.Γ), [⌊.⌊,Γ.⌊))  
((⌊.Γ,Γ.Γ), [⌊.⌊,Γ.Γ))  
((⌊.Γ,Γ.Γ), [⌊.⌊,Γ.Γ))  
((⌊.Γ,Γ.Γ), [⌊.⌊,Γ.Γ))  
((⌊.Γ,Γ.Γ), [⌊.Γ,Γ.⌊))



$((\perp.\top, \top.\perp), [\perp.\perp, \top.\top])$   
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 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$



$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
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 $((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$



$((\perp . \perp , \top . \perp ], (\perp . \perp , \top . \top ])$   
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$((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\Gamma])$   
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 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \neg, \neg . \neg))$   
 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \neg, \neg . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \neg, \neg . \neg))$   
 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \neg, \neg . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \neg, \neg . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \neg, \neg . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \Gamma, \neg . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \Gamma, \neg . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \Gamma, \neg . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \neg, \neg . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \neg, \neg . \neg])$   
 $((\perp . \Gamma, \Gamma . \Pi], [\perp . \neg, \neg . \neg])$   
 $((\perp . \Gamma, \neg . \neg], (\perp . \neg, \neg . \neg))$   
 $((\perp . \Gamma, \neg . \neg], (\perp . \neg, \neg . \Gamma))$   
 $((\perp . \Gamma, \neg . \neg], (\perp . \neg, \neg . \neg))$   
 $((\perp . \Gamma, \neg . \neg], (\perp . \Gamma, \neg . \neg))$   
 $((\perp . \Gamma, \neg . \neg], (\perp . \Gamma, \neg . \Gamma))$   
 $((\perp . \Gamma, \neg . \neg], (\perp . \Gamma, \neg . \neg))$



((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.⌊])  
((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.⌊))  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.⌊))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.⌊))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.⌊])  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.⌊])  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.⌊))  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.Γ))

$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), [\lceil \cdot \rceil, \lceil \cdot \rceil])$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), [\lceil \cdot \rceil, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), [\lceil \cdot \rceil, \lceil \cdot \rceil])$$
$$((\perp.\top, \top.\perp], [\perp.\top, \top.\top))$$
$$((\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$$
$$((\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$$
$$((\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), [\lceil \cdot \rceil, \lceil \cdot \rceil])$$
$$((\perp.\top, \top.\perp), [\perp.\top, \top.\top])$$
$$((\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$((\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$$
$$((\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$((\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$((\perp.\top, \top.\top], (\perp.\perp, \top.\perp))$$
$$((\sqcup.\top, \top.\sqcup], (\sqcup.\sqcup, \top.\top))$$
$$((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$((\perp.\top, \top.\top], (\perp.\top, \top.\top))$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$((\perp.\top, \top.\top], (\perp.\top, \top.\perp))$$
$$((\perp.\top, \top.\top], (\perp.\top, \top.\top))$$
$$((\perp.\top, \top.\top], (\perp.\top, \top.\top))$$



















([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )





$([1.7, 1.1], [1.7, 1.7])$   
 $([1.7, 1.1], [1.7, 1.1])$   
 $([1.7, 1.1], [1.7, 1.7])$   
 $([1.7, 1.1], [1.7, 1.7])$   
 $([1.7, 1.1], [1.1, 1.1])$   
 $([1.7, 1.1], [1.1, 1.7])$   
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 $([1.7, 1.1], [1.7, 1.7])$   
 $([1.7, 1.1], [1.7, 1.7])$   
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 $([1.7, 1.7], [1.7, 1.1])$   
 $([1.7, 1.7], [1.7, 1.7])$   
 $([1.7, 1.7], [1.7, 1.1])$   
 $([1.7, 1.7], [1.7, 1.7])$   
 $([1.7, 1.7], [1.7, 1.7])$   
 $([1.7, 1.7], [1.7, 1.1])$   
 $([1.7, 1.7], [1.7, 1.7])$   
 $([1.7, 1.7], [1.1, 1.1])$   
 $([1.7, 1.7], [1.1, 1.7])$   
 $([1.7, 1.7], [1.1, 1.7])$



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([1.7, 1.7], [1.7, 1.1])  
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([1.7, 1.7], [1.1, 1.1])  
([1.7, 1.7], [1.1, 1.7])  
([1.7, 1.7], [1.1, 1.7])  
([1.7, 1.7], [1.7, 1.1])  
([1.7, 1.7], [1.7, 1.7])  
([1.7, 1.7], [1.7, 1.7])  
([1.7, 1.7], [1.7, 1.1])  
([1.7, 1.7], [1.7, 1.7])





$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil, (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil, (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
$$([\perp.\perp, \top.\top], ([\perp.\top, \top.\perp]))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$([\perp.\perp], [\top.\top], ([\perp.\perp], [\top.\perp]))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil)$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top], ([\perp.\top], [\top.\perp]))$$
$$([\perp \cdot \perp, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
 $([\perp.\perp], [\top.\top], (\perp.\top, \top.\perp])$  $([\perp, \cdot], [\cdot, \top], [\perp, \neg], [\neg, \cdot])$ 
$$([\perp.\perp], [\top.\top], [\perp.\top], [\top.\top])$$
 $([\perp, \cdot], [\cdot, \top], [\perp, \cdot], [\cdot, \top])$ 
$$([\perp.\perp, \top.\top], [\perp.\perp, \top.\perp])$$
$$([\perp.\perp], [\top.\top], [\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\perp], [\top.\top]))$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp \cdot \perp, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top, \top.\top]))$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\perp])$$
$$([\bot . \bot, \top . \top], [\bot . \top, \top . \top])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\perp], [\top.\top])$$
$$([\perp, \cdot], [\cdot, \top], [\perp, \cdot], [\cdot, \top])$$

$$([\perp, \cdot], [\cdot, \top], [\perp, \cdot], [\cdot, \top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top, \top.\perp])$$
$$([\perp, \cdot], [\cdot, \top], [\perp, \cdot, \cdot, \top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top], [\top.\perp])$$
$$([\perp, \cdot], [\top, \cdot], [\perp, \cdot], [\top, \cdot])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\top]))$$
$$([\perp.\perp, \top.\top], ([\perp.\top, \top.\perp]))$$
$$([\perp.\perp, \top.\top], (\perp.\top, \top.\top))$$
$$([\perp.\perp, \top.\top], (\perp.\top, \top.\top))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor)$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\top])$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil)$$
$$([\perp.\perp], [\top.\top]), ([\perp.\top], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), ([\perp.\top], [\top.\top])$$
 $([\perp.\perp], [\top.\top]), ([\perp.\top], [\top.\top])$ 
$$([\perp.\perp], [\top.\top]), ([\perp.\top], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), ([\perp.\top], [\top.\top])$$
 $([\perp, \cdot], [\cdot, \top]), ([\perp, \cdot], [\cdot, \top])$





([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ], [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ], [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ], [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ], [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ))  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ])





[illegible]



[illegible]



$([\perp.\top, \top.\top], [\perp.\perp, \top.\perp])$

$([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$

$([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$

$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$

$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$

$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$

$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$

$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$

$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$

$\top.\top$  65.  $([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$

$((\perp.\perp, \top.\perp), (\perp.\perp, \top.\perp))$

$((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\perp, \top.\perp))$

$((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$

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 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\top), (\perp.\top, \top.\perp))$



$((\perp.\perp, \top.\top), [\perp.\perp, \top.\top])$

$((\perp.\perp, \top.\top), [\perp.\top, \top.\perp])$

$((\perp.\perp, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\perp, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\perp, \top.\top), [\perp.\top, \top.\perp])$

$((\perp.\perp, \top.\top), [\perp.\top, \top.\top])$

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$((\perp . \Gamma, \Gamma.\perp), (\perp.\neg, \Gamma.\Gamma))$   
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 $((\perp . \Gamma, \Gamma.\perp), (\perp.\perp, \Gamma.\perp))$   
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 $((\perp . \Gamma, \Gamma.\perp), (\perp.\Gamma, \Gamma.\Gamma))$   
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 $((\perp . \Gamma, \Gamma.\perp), (\perp.\neg, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp), (\perp.\neg, \Gamma.\Gamma))$   
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 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\perp))$   
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$((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \perp])$   
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 $((\perp.\perp, \top.\top], (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\top], (\perp.\top, \top.\perp))$





$((\perp . \perp , \top . \top ], [\perp . \perp , \top . \perp ))$   
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 $((\perp . \top , \top . \perp ], (\perp . \perp , \top . \top ))$   
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 $((\perp . \top , \top . \perp ], (\perp . \top , \top . \top ))$   
 $((\perp . \top , \top . \perp ], (\perp . \top , \top . \perp ))$



$((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \top, \Gamma.\perp])$   
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 $((\perp . \Gamma, \Gamma.\perp], [\perp . \top, \Gamma.\top])$   
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 $((\perp . \Gamma, \Gamma.\top], (\perp.\top, \Gamma.\top])$   
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 $((\perp . \Gamma, \Gamma.\top], [\perp.\perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], [\perp.\perp, \Gamma.\top))$

$((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \perp]))$   
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 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \perp]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \Gamma]))$   
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 $((\perp . \Gamma, \Gamma . \neg, (\perp . \neg, \Gamma . \Gamma)))$   
 $((\perp . \Gamma, \Gamma . \neg, (\perp . \neg, \Gamma . \neg)))$   
 $((\perp . \Gamma, \Gamma . \neg, (\perp . \perp, \Gamma . \perp)))$

((⌊. ⌈, ⌈.⌈ ], ⌊.⌋, ⌈.⌈ ))  
((⌊. ⌈, ⌈.⌈ ], ⌊.⌋, ⌈.⌈ ))  
((⌊. ⌈, ⌈.⌈ ], ⌊. ⌈, ⌈.⌋ ))  
((⌊. ⌈, ⌈.⌈ ], ⌊. ⌈, ⌈.⌈ ))  
((⌊. ⌈, ⌈.⌈ ], ⌊. ⌈, ⌈.⌈ ))  
((⌊. ⌈, ⌈.⌈ ], ⌊.⌈, ⌈.⌋ ))  
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((⌊. ⌈, ⌈.⌈ ], ⌊.⌋, ⌈.⌈ ))  
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((⌊. ⌈, ⌈.⌈ ], ⌊. ⌈, ⌈.⌈ ))  
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((⌊. ⌈, ⌈.⌈ ], ⌊.⌋, ⌈.⌋ ))  
((⌊. ⌈, ⌈.⌈ ], ⌊.⌋, ⌈.⌈ ))  
((⌊. ⌈, ⌈.⌈ ], ⌊. ⌈, ⌈.⌋ ))  
((⌊. ⌈, ⌈.⌈ ], ⌊. ⌈, ⌈.⌈ ))  
((⌊. ⌈, ⌈.⌈ ], ⌊. ⌈, ⌈.⌈ ))  
((⌊. ⌈, ⌈.⌈ ], ⌊.⌈, ⌈.⌋ ))  
((⌊. ⌈, ⌈.⌈ ], ⌊.⌈, ⌈.⌈ ))

$$\begin{aligned}
& ((\sqcup . \sqcap, \sqcap . \sqcup], [\sqcup . \sqcap, \sqcap . \sqcup]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcup, \sqcap . \sqcup)) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcup, \sqcap . \sqcap)) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcup, \sqcap . \sqcup)) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcap, \sqcap . \sqcup)) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcap, \sqcap . \sqcap)) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcap, \sqcap . \sqcup)) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcup, \sqcap . \sqcup)) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcup, \sqcap . \sqcap)) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcup, \sqcap . \sqcup)) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcup, \sqcap . \sqcup]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcup, \sqcap . \sqcap]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcup, \sqcap . \sqcup]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcap, \sqcap . \sqcup]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcap, \sqcap . \sqcap]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], (\sqcup . \sqcap, \sqcap . \sqcup]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], [\sqcup . \sqcup, \sqcap . \sqcup]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], [\sqcup . \sqcup, \sqcap . \sqcap]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], [\sqcup . \sqcup, \sqcap . \sqcup]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], [\sqcup . \sqcap, \sqcap . \sqcup]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], [\sqcup . \sqcap, \sqcap . \sqcap]) \\
& ((\sqcup . \sqcap, \sqcap . \sqcup], [\sqcup . \sqcap, \sqcap . \sqcup])
\end{aligned}$$



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((\text{A}, \text{A}), (\text{C}, \text{A}))  
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((\text{A}, \text{A}), (\text{C}, \text{C}))  
((\text{A}, \text{A}), (\text{C}, \text{D}))  
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((\text{A}, \text{A}), (\text{D}, \text{B}))  
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((\text{A}, \text{B}), (\text{A}, \text{C}))  
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 $((\perp.\perp, \top.\top), [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\top), [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\top), [\perp.\top, \top.\perp])$



$((\perp \cdot \Gamma, \Gamma.\perp), (\perp.\perp, \Gamma.\neg))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), (\perp \cdot \Gamma, \Gamma.\perp))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), (\perp \cdot \Gamma, \Gamma.\neg))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), (\perp \cdot \Gamma, \Gamma.\neg))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), (\perp.\neg, \Gamma.\perp))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), (\perp.\neg, \Gamma.\neg))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), (\perp.\neg, \Gamma.\neg))$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\perp])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\neg])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\neg])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\perp])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\neg])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\neg])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\perp])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\neg])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\neg])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\perp])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\neg])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\neg])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\perp])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\neg])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\perp])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\neg])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\neg])$







((⌊.⌈, ⌈.⌋), (⌊.⌈, ⌈.⌋))  
((⌊.⌈, ⌈.⌋), (⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌋), (⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌋), (⌊.⌈, ⌈.⌋))  
((⌊.⌈, ⌈.⌋), (⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌋), (⌊.⌈, ⌈.⌈))  
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((⌊.⌈, ⌈.⌋), (⌊.⌋, ⌈.⌈))  
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((⌊.⌈, ⌈.⌋), (⌊.⌋, ⌈.⌋))  
((⌊.⌈, ⌈.⌋), (⌊.⌋, ⌈.⌈))  
((⌊.⌈, ⌈.⌋), (⌊.⌋, ⌈.⌈))  
((⌊.⌈, ⌈.⌋), (⌊.⌈, ⌈.⌋))  
((⌊.⌈, ⌈.⌋), (⌊.⌈, ⌈.⌈))  
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((⌊.⌈, ⌈.⌋), (⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌋), (⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌋), (⌊.⌋, ⌈.⌋))





$((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$

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 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\perp])$   
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 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\perp))$

$((\perp . \perp , \top . \perp ), (\perp . \perp , \top . \top ))$   
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 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$







$((\perp . \Gamma, \Gamma.\perp], (\perp.\perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], (\perp . \Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp], (\perp . \Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], (\perp . \Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp))$   
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 $((\perp . \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$



((⌊.Γ,Γ.Π,⌊.Γ,Γ.Π))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.Π))  
 ((⌊.Γ,Γ.Π,⌊.⌋,Γ.⌋))  
 ((⌊.Γ,Γ.Π,⌊.⌋,Γ.Π))  
 ((⌊.Γ,Γ.Π,⌊.⌋,Γ.Γ))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.Π))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.Π))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.⌋))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.Π))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.⌋))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.Π))  
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 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.Π))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.⌋))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.Π))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.⌋))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.Π))



[illegible]



$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
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 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
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 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

















([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ])  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ])  
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$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lfloor \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lfloor \_ . \_ \rfloor , \lceil \_ . \rceil), (\lfloor \_ . \_ \rfloor , \lceil \_ . \_ \rceil))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
 $([\perp, \top], [\perp, \top])$  $([\perp, \top], [\perp, \top])$  $([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$ 
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
 $([\perp . \neg , \neg . \neg], [\perp . \neg , \neg . \neg ])$ 
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lfloor \cdot \rfloor)$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lfloor \cdot \rfloor]$$
$$([\perp.\top, \top.\top), [\perp.\bot, \top.\bot]))$$
$$([\perp, \top], [\perp, \top], [\perp, \top])$$



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 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$



[illegible]





$([\perp, \Gamma, \Gamma.\perp], [\perp, \neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp, \neg, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp, \neg, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\Gamma], [\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\Gamma], [\perp.\perp, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\Gamma], [\perp.\perp, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\Gamma], [\perp.\Gamma, \Gamma.\perp])$



$$([\perp, \top, \top, \top], [\perp, \perp, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp.\top, \top.\top], ([\perp.\perp, \top.\perp]))$$
$$([\perp.\top, \top.\top], (\perp.\perp, \top.\top))$$
$$([\perp.\top, \top.\top], (\perp.\perp, \top.\top))$$
$$([\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \perp))$$
$$([\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp.\top, \top.\top], (\perp.\top, \top.\top))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$([\perp.\top, \top.\top], (\perp.\top, \top.\top))$$
$$([\perp.\top, \top.\top], (\perp.\top, \top.\top))$$
 $([\perp, \top, \top, \top], [\perp, \perp, \top, \perp])$ 
$$([\perp, \top, \top.\top], ([\perp, \perp, \top.\top]))$$
$$([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$$
$$([\sqcup, \sqcap, \sqcap.\sqcap], [\sqcup, \sqcap, \sqcap.\sqcap])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$$

[illegible]

[illegible]

$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
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$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
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$$([\perp, \top], [\perp, \top], ([\perp, \top], [\perp, \top]))$$
$$([\perp.\top, \top.\top], ([\perp.\top, \top.\top]))$$
$$([\perp.\top, \top.\top], ([\perp.\top, \top.\perp]))$$
$$([\perp.\top, \top.\top], ([\perp.\top, \top.\top]))$$
$$([\perp.\top, \top.\top], ([\perp.\top, \top.\top]))$$
$$([\perp.\top, \top.\top], [\perp.\perp, \top.\perp])$$
$$([\perp, \top], [\perp, \top], [\perp, \perp], [\top, \top])$$
$$([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$$





$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$

$\top.\top$ 67.  $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

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 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \top ))$









$$((\sqcup \cdot \sqsupset, \sqsupset \cdot \sqsupset), (\sqcup \cdot \sqsupset, \sqsupset \cdot \sqsupset))$$
$$((\sqcup \cdot \sqsupset, \sqsupset \cdot \sqsupset), (\sqcup \cdot \sqsupset, \sqsupset \cdot \sqsupset))$$
$$((\perp.\top, \top.\top), (\perp.\bot, \top.\perp))$$
$$((\perp, \top, \top, \top), (\perp, \top, \top, \top))$$
$$((\sqcup.\top, \top.\top), (\sqcup.\bot, \top.\bot))$$
$$((\sqcup, \sqcap, \sqcup, \sqcap), (\sqcup, \sqcap, \sqcup, \sqcap))$$
$$((\sqcup, \sqcap, \sqcup, \sqcap), (\sqcup, \sqcap, \sqcup, \sqcap))$$
$$((\sqcup, \sqcap, \sqcup, \sqcap), (\sqcup, \sqcap, \sqcup, \sqcap))$$
$$((\perp \cdot \top, \top \cdot \top), (\perp \cdot \top, \top \cdot \perp])$$
$$((\perp \cdot \top, \top \cdot \top), (\perp \cdot \top, \top \cdot \top])$$
$$((\perp \cdot \top, \top \cdot \top), (\perp \cdot \top, \top \cdot \top])$$
$$((\perp \cdot \top, \top \cdot \top), (\perp \cdot \bot, \top \cdot \perp])$$
$$((\perp, \top, \top, \top), (\perp, \top, \top, \top))$$
$$((\perp \cdot \top, \top \cdot \top), (\perp \cdot \bot, \top \cdot \bot])$$
$$((\sqcup \cdot \sqcap, \sqcap \cdot \sqcap), [\sqcup \cdot \sqcup, \sqcap \cdot \sqcup])$$
$$((\sqcup, \sqcap, \sqcup, \sqcap), [\sqcup, \sqcap, \sqcup, \sqcap])$$
$$((\sqcup, \sqcap, \sqcup, \sqcap), [\sqcup, \sqcap, \sqcup, \sqcap])$$
$$((\sqcup \cdot \sqcap, \sqcap \cdot \sqcup), [\sqcup \cdot \sqcap, \sqcap \cdot \sqcup])$$
$$((\sqcup \cdot \sqcap, \sqcap \cdot \sqcup), [\sqcup \cdot \sqcap, \sqcap \cdot \sqcup))$$
$$((\sqcup \cdot \sqsupset, \sqsupset \cdot \sqsupset), [\sqcup \cdot \sqsupset, \sqsupset \cdot \sqsupset])$$
$$((\sqcup, \sqcap, \sqcap, \sqcap), [\sqcup, \sqcap, \sqcap, \sqcup])$$
$$((\sqcup, \sqcap, \sqcup, \sqcap), [\sqcup, \sqcap, \sqcup, \sqcap])$$
$$((\sqcup \cdot \sqcap, \sqcap \cdot \sqcup), [\sqcup \cdot \sqcap, \sqcap \cdot \sqcup))$$
$$((\sqcup, \sqcap, \sqcup, \sqcap), [\sqcup, \sqcap, \sqcup, \sqcap])$$
$$((\sqcup, \sqcap, \sqcap, \sqcap), [\sqcup, \sqcup, \sqcap, \sqcap])$$











$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$   
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$((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top])$

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 $((\perp . \perp , \top . \top ], (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ], (\perp . \perp , \top . \perp ])$   
 $((\perp . \perp , \top . \top ], (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ], (\perp . \perp , \top . \top ))$





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 $((\perp, \perp, \top, \top), (\perp, \top, \top, \top))$   
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 $((\perp, \top, \top, \perp), (\perp, \top, \top, \top))$





((⌊.Γ, Γ.Π, ⌊.⌋, Γ.Γ))  
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((א.ה, א.ה], [א.א, א.א])  
((א.ה, א.ה], [א.א, א.א))  
((א.ה, א.ה], [א.א, א.ה])  
((א.ה, א.ה], [א.ה, א.א])  
((א.ה, א.ה], [א.ה, א.א))





























$([\perp]_{\perp}, \Gamma_{\perp}), [\perp]_{\perp}, \Gamma_{\perp})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), [\perp]_{\perp}, \Gamma_{\top})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), [\perp]_{\perp}, \Gamma_{\neg})$   
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 $([\perp]_{\perp}, \Gamma_{\perp}), [\perp]_{\top}, \Gamma_{\neg})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), [\perp]_{\neg}, \Gamma_{\perp})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), [\perp]_{\neg}, \Gamma_{\top})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), [\perp]_{\neg}, \Gamma_{\neg})$   
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 $([\perp]_{\perp}, \Gamma_{\top}), ([\perp]_{\perp}, \Gamma_{\neg}))$   
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 $([\perp]_{\perp}, \Gamma_{\top}), ([\perp]_{\top}, \Gamma_{\top}))$   
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 $([\perp]_{\perp}, \Gamma_{\top}), ([\perp]_{\neg}, \Gamma_{\neg}))$   
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 $([\perp]_{\perp}, \Gamma_{\top}), ([\perp]_{\top}, \Gamma_{\perp}))$   
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 $([\perp]_{\perp}, \Gamma_{\top}), ([\perp]_{\top}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\top}), ([\perp]_{\neg}, \Gamma_{\perp}))$

$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lfloor \cdot \rfloor)$$
$$([\perp.\perp, \top.\top], [\perp.\perp, \top.\perp])$$
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$$([\perp.\perp, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\perp])$$
$$([\bot.\bot, \top.\top], [\bot.\top, \top.\bot])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
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$$([\perp.\perp], [\top.\top], [\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top, \top.\perp])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top], [\top.\perp])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\perp]))$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\top])$$
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$$([\perp.\perp], [\top.\top]), ([\perp.\top], [\top.\top])$$

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([1.1], [1.7], [1.7, 1.7])



([⊥ . ⊢, ⊢.⊥ ], [⊥ .⊥ , ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ .⊥ , ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ . ⊢, ⊢.⊥ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ . ⊢, ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ . ⊢, ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ .⊢ , ⊢.⊥ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ .⊢ , ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ .⊢ , ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ .⊥ , ⊢.⊥ ])   
([⊥ . ⊢, ⊢.⊥ ], [⊥ .⊥ , ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ .⊥ , ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ . ⊢, ⊢.⊥ ])   
([⊥ . ⊢, ⊢.⊥ ], [⊥ . ⊢, ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ . ⊢, ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊥ ], [⊥ .⊢ , ⊢.⊥ ])   
([⊥ . ⊢, ⊢.⊥ ], [⊥ .⊢ , ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊢ ], (⊥ .⊥ , ⊢.⊥ ))  
([⊥ . ⊢, ⊢.⊢ ], (⊥ .⊥ , ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊢ ], (⊥ .⊥ , ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊢ ], (⊥ . ⊢, ⊢.⊥ ))  
([⊥ . ⊢, ⊢.⊢ ], (⊥ . ⊢, ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊢ ], (⊥ . ⊢, ⊢.⊢ ))  
([⊥ . ⊢, ⊢.⊢ ], (⊥ .⊢ , ⊢.⊥ ))  
([⊥ . ⊢, ⊢.⊢ ], (⊥ .⊢ , ⊢.⊢ ))





([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ))  
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 $([1, 7], [1, 7], ([1, 7], [1, 7]))$   
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 $([1, 7], [1, 7], ([1, 1], [1, 7]))$   
 $([1, 7], [1, 7], ([1, 1], [1, 7]))$   
 $([1, 7], [1, 7], ([1, 7], [1, 1]))$



$([a, b], [c, d])$

$([a, b], [c, e])$

$([a, b], [c, f])$

$([a, b], [c, g])$

$([a, b], [c, h])$

$([a, b], [c, i])$

$([a, b], [c, j])$

$([a, b], [c, k])$

$([a, b], [c, l])$

$([a, b], [c, m])$

$([a, b], [c, n])$

$([a, b], [c, o])$

$([a, b], [c, p])$

$([a, b], [c, q])$

$([a, b], [c, r])$

$([a, b], [c, s])$

$([a, b], [c, t])$

$([a, b], [c, u])$

$([a, b], [c, v])$

$([a, b], [c, w])$

$([a, b], [c, x])$

$([a, b], [c, y])$

$\Gamma. \Gamma^{68}. ([a, b], [c, z])$

$(([a, b], [c, z]), ([a, b], [c, z]))$

$(([a, b], [c, z]), ([a, b], [c, z]))$











$((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\top, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\top, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\top, \Gamma.\top))$   
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 $((\perp . \Gamma, \Gamma.\perp), [\perp.\top, \Gamma.\Gamma])$   
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 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\top, \Gamma.\Gamma))$



((⌊ . ⌈ , ⌈ . ⌈) , [⌊ . ⌈ , ⌈ . ⌊ ] )  
((⌊ . ⌈ , ⌈ . ⌈) , [⌊ . ⌈ , ⌈ . ⌈] )  
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((⌊ . ⌈ , ⌈ . ⌈) , (⌊ . ⌊ , ⌈ . ⌈) )  
((⌊ . ⌈ , ⌈ . ⌈) , (⌊ . ⌈ , ⌈ . ⌊ ) )  
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((⌊ . ⌈ , ⌈ . ⌈) , (⌊ . ⌈ , ⌈ . ⌈) )  
((⌊ . ⌈ , ⌈ . ⌈) , (⌊ . ⌈ , ⌈ . ⌊ ) )  
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((⌊ . ⌈ , ⌈ . ⌈) , (⌊ . ⌊ , ⌈ . ⌈] )  
((⌊ . ⌈ , ⌈ . ⌈) , (⌊ . ⌊ , ⌈ . ⌈] )  
((⌊ . ⌈ , ⌈ . ⌈) , (⌊ . ⌈ , ⌈ . ⌊ ] )  
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((⌊ . ⌈ , ⌈ . ⌈) , (⌊ . ⌈ , ⌈ . ⌊ ] )  
((⌊ . ⌈ , ⌈ . ⌈) , (⌊ . ⌈ , ⌈ . ⌈] )  
((⌊ . ⌈ , ⌈ . ⌈) , (⌊ . ⌈ , ⌈ . ⌈] )  
((⌊ . ⌈ , ⌈ . ⌈) , [⌊ . ⌊ , ⌈ . ⌊ ) )  
((⌊ . ⌈ , ⌈ . ⌈) , [⌊ . ⌊ , ⌈ . ⌈) )  
((⌊ . ⌈ , ⌈ . ⌈) , [⌊ . ⌊ , ⌈ . ⌈) )  
((⌊ . ⌈ , ⌈ . ⌈) , [⌊ . ⌈ , ⌈ . ⌊ ) )



$((\perp.\top, \top.\perp), (\perp.\perp, \top.\top))$   
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 $((\perp.\top, \top.\perp), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\perp), (\perp.\top, \top.\top))$

$$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$$
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$$((\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
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$$((\sqcup.\top, \top.\sqcap), (\sqcup.\sqcap, \top.\sqcup])$$
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$$((\perp.\top, \top.\top), (\perp.\top, \top.\perp])$$
$$((\perp.\top, \top.\top), (\perp.\top, \top.\top])$$
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$$((\sqcup \cdot \sqcap, \sqcap \cdot \sqcup), [\sqcup \cdot \sqcap, \sqcap \cdot \sqcup))$$
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$$((\sqcup.\top, \top.\sqcap), [\sqcup.\top, \top.\sqcup])$$

$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\perp, \top.\perp])$

$((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp])$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\top])$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\top])$

$((\perp.\top, \top.\top), (\perp.\top, \top.\perp])$



[illegible]









$((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \perp, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \Gamma, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \neg, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \neg, \Gamma.\Gamma))$





((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.⌊))  
((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.Γ))  
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((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], ⌊.⌊, Γ.⌊))  
((⌊.Γ, Γ.⌊], ⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.⌊], ⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.⌊], ⌊.Γ, Γ.⌊))  
((⌊.Γ, Γ.⌊], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], ⌊.Γ, Γ.Γ))  
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((⌊.Γ, Γ.⌊], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], ⌊.⌊, Γ.⌊])  
((⌊.Γ, Γ.⌊], ⌊.⌊, Γ.Γ])













$([\perp, \perp], \Gamma, \Gamma), [\perp, \perp], \Gamma, \perp))$   
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 $([\perp, \perp], \Gamma, \Gamma), [\perp, \neg, \Gamma, \neg))$   
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 $([\perp, \perp], \Gamma, \Gamma), [\perp, \neg, \Gamma, \perp])$   
 $([\perp, \perp], \Gamma, \Gamma), [\perp, \neg, \Gamma, \Gamma])$   
 $([\perp, \perp], \Gamma, \Gamma), [\perp, \neg, \Gamma, \neg])$   
 $([\perp, \perp], \Gamma, \Gamma), [\perp, \neg, \neg, \perp])$   
 $([\perp, \perp], \Gamma, \Gamma), [\perp, \neg, \neg, \Gamma])$   
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 $([\perp, \perp], \Gamma, \neg), (\perp, \perp], \Gamma, \Gamma))$   
 $([\perp, \perp], \Gamma, \neg), (\perp, \perp], \Gamma, \neg))$   
 $([\perp, \perp], \Gamma, \neg), (\perp, \neg, \Gamma, \perp))$   
 $([\perp, \perp], \Gamma, \neg), (\perp, \neg, \Gamma, \Gamma))$   
 $([\perp, \perp], \Gamma, \neg), (\perp, \neg, \Gamma, \neg))$   
 $([\perp, \perp], \Gamma, \neg), (\perp, \neg, \neg, \perp))$

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([1.1, 1.7], [1.7, 1.1])  
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([1.1, 1.7], [1.1, 1.1])  
([1.1, 1.7], [1.1, 1.7])  
([1.1, 1.7], [1.1, 1.7])  
([1.1, 1.7], [1.7, 1.1])  
([1.1, 1.7], [1.7, 1.7])



([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] ) )











$$([\perp, \top], [\perp, \top], [\perp, \top])$$
$$([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp, \top], [\perp, \top], [\perp, \top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$$
 $([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$ 
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), \lceil \cdot \rceil, \lfloor \cdot \rfloor)$$
 $([\sqcup.\top, \top.\top], [\sqcup.\top, \top.\top])$  $([\perp . \top, \top . \top], [\perp . \perp, \top . \perp])$ 
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil)$$
 $([\perp.\top, \top.\top), (\perp.\perp, \top.\top))$ 
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor)$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor)$$
 $(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$ 
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
 $([\perp, \cdot], [\cdot, \cdot]), ([\perp, \cdot], [\cdot, \cdot])$  $([\perp, \cdot], \vdash, \cdot), ([\perp, \cdot], \vdash, \vdash)$  $([\perp, \cdot], [\cdot, \cdot]), ([\perp, \cdot], [\cdot, \cdot])$  $([\perp, \cdot], [\cdot, \cdot]), ([\perp, \cdot], [\cdot, \perp])$  $([\perp, \top], [\perp, \top]), ([\perp, \top], [\perp, \top])$  $([\perp, \top], [\perp, \top]), ([\perp, \top], [\perp, \top])$  $(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil)$  $([\perp, \cdot], \vdash, \cdot), ([\perp, \cdot], \vdash, \cdot, \top)$





[illegible]





$$([\perp.\perp], [\top.\top], [\perp.\top], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), [\perp.\top], [\top.\top])$$
$$([\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \perp, \top \cdot \top))$$
$$([\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \perp))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp.\top, \top.\perp], (\perp.\top, \top.\perp))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp.\top, \top.\perp], ([\perp.\top, \top.\top]))$$
$$([\perp, \top, \top, \perp], [\perp, \perp, \top, \perp])$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \perp, \top \cdot \top))$$
$$([\perp, \top, \top, \perp], [\perp, \perp, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \perp], ([\perp \cdot \top, \top \cdot \perp]))$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$$
$$([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\perp, \top.\top]))$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \perp, \top \cdot \top])$$
$$([\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \perp]))$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \top])$$

$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$$
$$([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$$
$$([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$$
$$([\perp, \top, \top, \perp], [\perp, \perp, \top, \perp])$$
$$([\perp, \top, \top, \perp], [\perp, \perp, \top, \top])$$
$$([\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$$
$$([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$$
$$([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$$
$$([\perp.\top, \top.\top], ([\perp.\perp, \top.\perp]))$$
$$([\perp \cdot \top, \top \cdot \top], (\perp \cdot \perp, \top \cdot \top))$$
$$([\perp.\top, \top.\top], (\perp.\perp, \top.\top))$$
$$([\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \perp))$$
$$([\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp \cdot \top, \top \cdot \top], ([\perp \cdot \top, \top \cdot \top]))$$
$$([\perp.\top, \top.\top], ([\perp.\bot, \top.\perp]))$$
$$([\perp, \top, \top, \top], (\perp, \top, \top, \top))$$
$$([\perp.\top, \top.\top], (\perp.\top, \top.\top))$$
$$([\perp \cdot \top, \top \cdot \top], ([\perp \cdot \perp, \top \cdot \perp]))$$
$$([\perp, \top, \top, \top], ([\perp, \perp], [\top, \top]))$$
 $([\perp, \top, \top, \top], (\perp, \perp, \top, \top])$

[illegible]



([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ]))  
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 $([1, 7], [1, 1], [1, 7], [1, 7])$   
 $([1, 7], [1, 1], [1, 7], [1, 1])$   
 $([1, 7], [1, 1], [1, 7], [1, 7])$   
 $([1, 7], [1, 1], [1, 1], [1, 1])$   
 $([1, 7], [1, 1], [1, 1], [1, 7])$   
 $([1, 7], [1, 1], [1, 1], [1, 7])$   
 $([1, 7], [1, 1], [1, 7], [1, 1])$   
 $([1, 7], [1, 1], [1, 7], [1, 7])$   
 $([1, 7], [1, 1], [1, 7], [1, 1])$   
 $([1, 7], [1, 1], [1, 7], [1, 7])$   
 $([1, 7], [1, 7], [1, 1], [1, 1])$   
 $([1, 7], [1, 7], [1, 1], [1, 7])$   
 $([1, 7], [1, 7], [1, 1], [1, 7])$   
 $([1, 7], [1, 7], [1, 7], [1, 1])$



$$([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp, \top], [\perp, \top], [\perp, \top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp, \top], [\perp, \top], [\perp, \top])$$
 $([\perp.\top, \top.\top], [\perp.\top, \top.\top])$  $([\perp.\top, \top.\top], (\perp.\perp, \top.\perp))$ 
$$([\perp.\top, \top.\top], (\perp.\perp, \top.\top))$$
$$([\perp.\top, \top.\top], (\perp.\perp, \top.\top))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lfloor \cdot \rfloor)$$
 $([\perp.\top, \top.\top], (\perp.\top, \top.\top))$  $([\perp.\top, \top.\top], (\perp.\top, \top.\perp))$ 
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
 $([\perp.\top, \top.\top], [\perp.\perp, \top.\perp])$  $([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$  $([\perp, \top], [\perp, \top])$  $([\perp, \cdot], [\cdot, \top], (\perp, \cdot, \top))$ 
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rfloor, \lfloor \cdot \rceil)$$
 $([\perp, \top], [\top, \top]), ([\perp, \top], [\top, \top])$  $([\perp, \cdot], [\cdot, \top], (\perp, \cdot, \top))$  $([\perp, \top], [\perp, \top])$  $([\perp, \cdot], [\cdot, \top], (\perp, \cdot, \top))$

$([a, b], [c, d])$

$([a, b], [c, e])$

$([a, b], [c, f])$

$([a, b], [d, c])$

$([a, b], [d, e])$

$([a, b], [d, f])$

$([a, b], [e, c])$

$([a, b], [e, d])$

$([a, b], [e, f])$

$([a, b], [f, c])$

$([a, b], [f, d])$

$([a, b], [f, e])$

$([a, b], [g, c])$

$([a, b], [g, d])$

$([a, b], [g, e])$

$([a, b], [h, c])$

$([a, b], [h, d])$

$([a, b], [h, e])$

7. 69.  $([a, c], [d, e])$

$([a, c], [d, f])$

$([a, c], [e, d])$

$([a, c], [e, f])$

$([a, c], [f, d])$

$([a, c], [f, e])$

$([a, c], [g, d])$











$((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \top, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \top, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \top, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \perp, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \perp, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \top, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \top, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \top, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \top, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top), (\perp . \perp, \Gamma.\top))$

$((\perp . \Gamma, \Gamma . \Gamma), (\perp . \Gamma, \Gamma . \bot))$   
 $((\perp . \Gamma, \Gamma . \Gamma), (\perp . \Gamma, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \Gamma), (\perp . \Gamma, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Gamma), (\perp . \neg, \Gamma . \bot))$   
 $((\perp . \Gamma, \Gamma . \Gamma), (\perp . \neg, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \Gamma), (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \bot, \Gamma . \bot])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \bot, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \bot, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \Gamma, \Gamma . \bot])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \Gamma, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \Gamma, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \neg, \Gamma . \bot])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \neg, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \bot, \Gamma . \bot])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \bot, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \bot, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \Gamma, \Gamma . \bot])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \Gamma, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\bot . \neg, \Gamma . \bot])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \bot, \Gamma . \bot))$



$((\perp, \top, \top), [\perp, \top, \top])$

$((\perp, \top, \top), [\perp, \perp, \top])$

$((\perp, \top, \top), [\perp, \perp, \top])$

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$((\perp, \top, \top), [\perp, \top, \top])$

$((\perp, \top, \top), [\perp, \top, \top])$

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$((\perp, \top, \perp), (\perp, \perp, \top))$

$((\perp, \top, \perp), (\perp, \perp, \top))$

$((\perp, \top, \perp), (\perp, \top, \perp))$

$((\perp, \top, \perp), (\perp, \top, \top))$

$((\perp, \top, \perp), (\perp, \top, \top))$

((⌊.7, ⌈.⌋), (⌊.7, ⌈.⌋))  
((⌊.7, ⌈.⌋), (⌊.7, ⌈.⌈))  
((⌊.7, ⌈.⌋), (⌊.7, ⌈.7))  
((⌊.7, ⌈.⌋), (⌊.⌋, ⌈.⌋))  
((⌊.7, ⌈.⌋), (⌊.⌋, ⌈.⌈))  
((⌊.7, ⌈.⌋), (⌊.⌋, ⌈.7))  
((⌊.7, ⌈.⌋), (⌊.⌈, ⌈.⌋))  
((⌊.7, ⌈.⌋), (⌊.⌈, ⌈.⌈))  
((⌊.7, ⌈.⌋), (⌊.⌈, ⌈.7))  
((⌊.7, ⌈.⌋), (⌊.7, ⌈.⌋))  
((⌊.7, ⌈.⌋), (⌊.7, ⌈.⌈))  
((⌊.7, ⌈.⌋), (⌊.7, ⌈.7))  
((⌊.7, ⌈.⌋), (⌊.⌋, ⌈.⌋))  
((⌊.7, ⌈.⌋), (⌊.⌋, ⌈.⌈))  
((⌊.7, ⌈.⌋), (⌊.⌋, ⌈.7))  
((⌊.7, ⌈.⌋), (⌊.⌈, ⌈.⌋))  
((⌊.7, ⌈.⌋), (⌊.⌈, ⌈.⌈))  
((⌊.7, ⌈.⌋), (⌊.⌈, ⌈.7))  
((⌊.7, ⌈.⌋), (⌊.7, ⌈.⌋))  
((⌊.7, ⌈.⌋), (⌊.7, ⌈.⌈))  
((⌊.7, ⌈.⌋), (⌊.7, ⌈.7))  
((⌊.7, ⌈.⌈), (⌊.⌋, ⌈.⌋))  
((⌊.7, ⌈.⌈), (⌊.⌋, ⌈.⌈))  
((⌊.7, ⌈.⌈), (⌊.⌋, ⌈.7))  
((⌊.7, ⌈.⌈), (⌊.⌈, ⌈.⌋))



$((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$











$((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \top, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \top, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \top, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \top, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \perp, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \Gamma, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \top, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \top, \Gamma.\top))$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \perp, \Gamma.\top])$   
 $((\perp . \Gamma, \Gamma.\top], (\perp . \perp, \Gamma.\top])$

$((\perp . \Gamma, \Gamma . \Pi, (\perp . \Gamma, \Gamma . \bot))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \Gamma, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \Gamma, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \neg, \Gamma . \bot))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \neg, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \Pi, (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \bot, \Gamma . \bot]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \bot, \Gamma . \Gamma]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \bot, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \bot]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \Gamma]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \bot]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \Gamma]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \bot, \Gamma . \bot]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \bot, \Gamma . \Gamma]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \bot, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \bot]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \Gamma]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \Gamma, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \bot]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \Gamma]))$   
 $((\perp . \Gamma, \Gamma . \Pi, [\perp . \neg, \Gamma . \neg]))$   
 $((\perp . \Gamma, \Gamma . \neg], (\perp . \bot, \Gamma . \bot))$

((⌊.Γ, Γ.Γ], (⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.Γ], (⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.⌊))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.⌊))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], (⌊.⌊, Γ.⌊))  
((⌊.Γ, Γ.Γ], (⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.Γ], (⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.⌊))  
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((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.Γ))  
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((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.⌊))  
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((⌊.Γ, Γ.Γ], (⌊.⌊, Γ.⌊))  
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((⌊.Γ, Γ.Γ], (⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.⌊))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.⌊))  
((⌊.Γ, Γ.Γ], (⌊.Γ, Γ.Γ))



$((\perp.\top, \top.\perp], (\perp.\top, \top.\perp])$   
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 $((\perp.\top, \top.\perp], (\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\perp])$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\top], (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\top], (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top], (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top], (\perp.\top, \top.\perp))$



((א.ה, ב.ב], [א.א, ב.ב))  
((א.ה, ב.ב], [א.ב, ב.א))  
((א.ה, ב.ב], [א.ב, ב.ב))  
((א.ה, ב.ב], [א.ב, ב.ה))  
((א.ה, ב.ב], [א.ה, ב.א))  
((א.ה, ב.ב], [א.ה, ב.ב))  
((א.ה, ב.ה], [א.א, ב.א))  
((א.ה, ב.ה], [א.א, ב.ב))  
((א.ה, ב.ה], [א.א, ב.ה))  
((א.ה, ב.ה], [א.ב, ב.א))  
((א.ה, ב.ה], [א.ב, ב.ב))  
((א.ה, ב.ה], [א.ב, ב.ה))  
((א.ה, ב.ה], [א.ה, ב.א))  
((א.ה, ב.ה], [א.ה, ב.ב))  
((א.ה, ב.ה], [א.ה, ב.ה))  
((א.ה, ב.ה], [א.א, ב.א))  
((א.ה, ב.ה], [א.א, ב.ב))  
((א.ה, ב.ה], [א.א, ב.ה))  
((א.ה, ב.ה], [א.ב, ב.א))  
((א.ה, ב.ה], [א.ב, ב.ב))  
((א.ה, ב.ה], [א.ב, ב.ה))  
((א.ה, ב.ה], [א.ה, ב.א))  
((א.ה, ב.ה], [א.ה, ב.ב))  
((א.ה, ב.ה], [א.ה, ב.ה))









$([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_-, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_+, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_+, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_+, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_-, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_-, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_+, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_-, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_-, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_+, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_+, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_+, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_+, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_-, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_-, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_+, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_+, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_-, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_-, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_+, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_-, [1]_+, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_+, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_+, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_-, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_-, [1]_+)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_+, [1]_-)$   
 $([1]_-, [1]_-, [1]_+)$ ,  $([1]_+, [1]_+, [1]_+)$



([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )





$$([\perp, \top, \top, \top], [\perp, \perp, \top, \top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp \cdot \top, \top \cdot \top]), [\perp \cdot \top, \top \cdot \top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp, \top], [\perp, \top]), [\perp, \top], [\top, \top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
 $([\perp.\top, \top.\perp), (\perp.\perp, \top.\top))$ 
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor)$$
 $([\perp . \top, \top . \perp], [\perp . \top, \top . \top])$ 
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
 $([\perp.\top, \top.\perp), (\perp.\top, \top.\perp))$  $([\perp.\top, \top.\perp), (\perp.\top, \top.\top))$  $([\perp.\top, \top.\perp), (\perp.\top, \top.\top))$  $([\perp, \top], [\perp, \perp]), ([\perp, \perp], [\top, \perp])$  $([\perp, \top], [\perp, \perp]), ([\perp, \perp], [\top, \top])$  $([\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$  $([\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$ 
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
 $([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$  $([\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$  $([\perp, \top], [\perp, \top]), ([\perp, \top], [\perp, \top])$  $([\perp, \top], [\perp, \top]), ([\perp, \top], [\perp, \top])$



([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
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([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
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([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ ,  $\top$ ))

([ $\perp$ ],  $\top$ ), ( $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ )]  
([ $\perp$ ],  $\top$ ), ( $\top$ ,  $\perp$ ), ( $\perp$ ,  $\perp$ )]  
([ $\perp$ ],  $\top$ ), ( $\top$ ,  $\top$ ), ( $\perp$ ,  $\top$ )]  
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([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\perp$ ), ( $\top$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\perp$ ), ( $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\perp$ ), ( $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\top$ ), ( $\top$ ,  $\perp$ ))  
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([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\perp$ ), ( $\top$ ,  $\top$ )]  
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([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\top$ ), ( $\top$ ,  $\perp$ )]  
([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\top$ ), ( $\top$ ,  $\top$ )]  
([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\perp$ ), ( $\top$ ,  $\perp$ )]  
([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\perp$ ), ( $\top$ ,  $\top$ )]  
([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\top$ ), ( $\top$ ,  $\perp$ )]  
([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\top$ ), ( $\top$ ,  $\top$ )]  
([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\perp$ ), ( $\top$ ,  $\perp$ ))  
([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\perp$ ), ( $\top$ ,  $\top$ ))  
([ $\perp$ ],  $\top$ ), ( $\perp$ ,  $\perp$ ), ( $\top$ ,  $\top$ ))

$([1, 7], [7, 7]), [1, 7], [7, 1])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 1])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 1], [7, 1])$   
 $([1, 7], [7, 7]), [1, 1], [7, 7])$   
 $([1, 7], [7, 7]), [1, 1], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 1])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 1])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 1], [7, 1])$   
 $([1, 1], [7, 1]), ([1, 1], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 1], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 1])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 1])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 1], [7, 1])$

$([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\perp}, \Gamma_{\top})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\perp}, \Gamma_{\neg})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\top}, \Gamma_{\perp})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\top}, \Gamma_{\top})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\top}, \Gamma_{\neg})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\neg}, \Gamma_{\perp})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\neg}, \Gamma_{\top})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\neg}, \Gamma_{\neg})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\perp}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\perp}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\perp}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\top}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\top}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\top}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\neg}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\neg}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\neg}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\perp}, \Gamma_{\perp})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\perp}, \Gamma_{\top})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\perp}, \Gamma_{\neg})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\top}, \Gamma_{\perp})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\top}, \Gamma_{\top})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\top}, \Gamma_{\neg})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\neg}, \Gamma_{\perp})$   
 $([\perp]_{\perp}, \Gamma_{\perp}), ([\perp]_{\neg}, \Gamma_{\top})$







$([\perp, \Gamma, \Gamma.\perp], (\perp.\perp, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\perp, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\perp, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$

$([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\perp))$





$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp, \top, \top], [\perp, \top, \top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
 $([\perp, \top], (\perp, \top))$  $([\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$  $([\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$ 
$$([\perp.\top, \top.\perp], (\perp.\top, \top.\perp))$$
$$([\perp.\top, \top.\perp], (\perp.\top, \top.\top))$$
 $([\perp.\top, \top.\perp], (\perp.\top, \top.\top))$ 
$$([\perp.\top, \top.\perp], (\perp.\top, \top.\perp))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
 $([\perp, \top], [\perp, \top])$  $([\perp, \top], [\perp, \perp], [\top, \top])$ 
$$([\perp.\top, \top.\perp], ([\perp.\perp, \top.\top]))$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lfloor \cdot \rfloor)$$
 $([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$  $([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$ 
$$([\perp.\top, \top.\perp], [\perp.\perp, \top.\top]))$$

$([1, 7], [1, 2], [1, 2], [1, 7])$   
 $([1, 7], [1, 2], [1, 2], [1, 7])$   
 $([1, 7], [1, 2], [1, 7], [1, 2])$   
 $([1, 7], [1, 2], [1, 7], [1, 7])$   
 $([1, 7], [1, 2], [1, 7], [1, 7])$   
 $([1, 7], [1, 2], [1, 7], [1, 2])$   
 $([1, 7], [1, 2], [1, 7], [1, 7])$   
 $([1, 7], [1, 2], [1, 7], [1, 7])$   
 $([1, 7], [1, 2], [1, 2], [1, 2])$   
 $([1, 7], [1, 2], [1, 2], [1, 7])$   
 $([1, 7], [1, 2], [1, 2], [1, 7])$   
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 $([1, 7], [1, 2], [1, 7], [1, 7])$   
 $([1, 7], [1, 2], [1, 7], [1, 7])$   
 $([1, 7], [1, 2], [1, 7], [1, 2])$   
 $([1, 7], [1, 2], [1, 7], [1, 7])$   
 $([1, 7], [1, 7], [1, 2], [1, 2])$   
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 $([1, 7], [1, 7], [1, 7], [1, 7])$   
 $([1, 7], [1, 7], [1, 7], [1, 2])$   
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$([1, 1], [1, 1], [1, 1, 1, 1])$

$([1, 1], [1, 1], [1, 1, 1, 1])$

$([1, 1], [1, 1], [1, 1, 1, 1])$

$([1, 1], [1, 1], [1, 1, 1, 1])$

$([1, 1], [1, 1], [1, 1, 1, 1])$

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$([1, 1], [1, 1], [1, 1, 1, 1])$











$((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\perp])$   
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 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\neg, \Gamma.\perp])$





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$$((\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lfloor \cdot \rfloor))$$
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$$((\sqcup \cdot \sqcap, \sqcap \cdot \sqcup), [\sqcup \cdot \sqcap, \sqcap \cdot \sqcup))$$
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$$((\sqcup.\top, \top.\sqcup), [\sqcup.\top, \top.\top))$$
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$$((\sqcup, \sqcap, \sqcup, \sqcap), [\sqcup, \sqcap, \sqcup, \sqcap])$$
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$$((\sqcup \cdot \top, \top \cdot \sqcup), [\sqcup \cdot \top, \top \cdot \sqcup])$$
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$((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$   
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$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp])$   
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$((\perp . \perp , \top . \perp ], [\perp . \top , \top . \top ])$   
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$((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\perp])$   
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((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.⌊])  
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((⌊.Γ, Γ.⌊], [⌊.⌊, Γ.⌊))



















([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ) )  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) )

([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ))





$([1.7, 1.1], [1.7, 1.7])$   
 $([1.7, 1.1], [1.7, 1.7])$   
 $([1.7, 1.1], [1.7, 1.1])$   
 $([1.7, 1.1], [1.7, 1.7])$   
 $([1.7, 1.1], [1.7, 1.7])$   
 $([1.7, 1.1], [1.1, 1.1])$   
 $([1.7, 1.1], [1.1, 1.7])$   
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 $([1.7, 1.1], [1.7, 1.7])$   
 $([1.7, 1.1], [1.7, 1.1])$   
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 $([1.7, 1.1], [1.7, 1.7])$   
 $([1.7, 1.7], [1.1, 1.1])$   
 $([1.7, 1.7], [1.1, 1.7])$   
 $([1.7, 1.7], [1.1, 1.7])$   
 $([1.7, 1.7], [1.7, 1.1])$   
 $([1.7, 1.7], [1.7, 1.7])$   
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 $([1.7, 1.7], [1.7, 1.1])$   
 $([1.7, 1.7], [1.7, 1.7])$   
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 $([1.7, 1.7], [1.1, 1.1])$   
 $([1.7, 1.7], [1.1, 1.7])$



$([1.7, 7.7], [1.1, 7.1])$   
 $([1.7, 7.7], [1.1, 7.7])$   
 $([1.7, 7.7], [1.1, 7.7])$   
 $([1.7, 7.7], [1.7, 7.1])$   
 $([1.7, 7.7], [1.7, 7.7])$   
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 $([1.7, 7.7], [1.7, 7.1])$   
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 $([1.7, 7.7], [1.1, 7.7])$   
 $([1.7, 7.7], [1.1, 7.7])$   
 $([1.7, 7.7], [1.7, 7.1])$   
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 $([1.7, 7.7], [1.7, 7.7])$   
 $([1.7, 7.7], [1.1, 7.1])$   
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 $([1.7, 7.7], [1.1, 7.7])$   
 $([1.7, 7.7], [1.7, 7.1])$   
 $([1.7, 7.7], [1.7, 7.7])$   
 $([1.7, 7.7], [1.7, 7.1])$   
 $([1.7, 7.7], [1.7, 7.7])$



$$\begin{aligned}
& ([\perp . \perp , \top . \perp ], (\perp . \top , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], (\perp . \top , \top . \perp )) \\
& ([\perp . \perp , \top . \perp ], (\perp . \top , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], (\perp . \top , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \perp , \top . \perp ]) \\
& ([\perp . \perp , \top . \perp ], [\perp . \perp , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \perp , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \top , \top . \perp )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \top , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \top , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \top , \top . \perp )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \top , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \perp , \top . \perp ]) \\
& ([\perp . \perp , \top . \perp ], [\perp . \perp , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \perp , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \top , \top . \perp ]) \\
& ([\perp . \perp , \top . \perp ], [\perp . \top , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \top , \top . \top )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \top , \top . \perp )) \\
& ([\perp . \perp , \top . \perp ], [\perp . \top , \top . \top )) \\
& ([\perp . \perp , \top . \top ], (\perp . \perp , \top . \perp )) \\
& ([\perp . \perp , \top . \top ], (\perp . \perp , \top . \top )) \\
& ([\perp . \perp , \top . \top ], (\perp . \perp , \top . \top ))
\end{aligned}$$



([ $\perp$ ],  $\perp$  ,  $\top$  ,  $\top$  ], [ $\perp$  ,  $\perp$  ,  $\top$  ,  $\top$  ])  
([ $\perp$  ,  $\perp$  ,  $\top$  ,  $\top$  ], [ $\perp$  ,  $\perp$  ,  $\top$  ,  $\top$  ] )  
([ $\perp$  ,  $\perp$  ,  $\top$  ,  $\top$  ], [ $\perp$  ,  $\top$  ,  $\top$  ,  $\perp$  ] )  
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([ $\perp$  ,  $\perp$  ,  $\top$  ,  $\top$  ], ( $\perp$  ,  $\top$  ,  $\top$  ,  $\top$  ])

[illegible]



([⊥ . Γ , Γ . ⊥] , [⊥ . Γ , Γ . Γ])  
([⊥ . Γ , Γ . ⊥] , [⊥ . Γ , Γ . ⊔])  
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([⊥ . Γ , Γ . Γ] , [⊥ . ⊥ , Γ . ⊥])  
([⊥ . Γ , Γ . Γ] , [⊥ . ⊥ , Γ . Γ])

([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ))  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ))  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ))











$([a, b], [a, b])$   
 $([a, b], [c, d])$   
 $([a, b], [c, e])$   
 $([a, b], [c, f])$   
 $([a, b], [d, c])$   
 $([a, b], [d, e])$   
 $([a, b], [d, f])$   
 $([a, b], [e, c])$   
 $([a, b], [e, d])$   
 $([a, b], [e, f])$   
 $[f, 7].((a, c), [c, d])$   
 $(([c, d], [c, d]), ([c, d], [c, d]))$   
 $(([c, d], [c, d]), ([c, d], [c, e]))$   
 $(([c, d], [c, d]), ([c, d], [c, f]))$   
 $(([c, d], [c, d]), ([c, d], [d, c]))$   
 $(([c, d], [c, d]), ([c, d], [d, e]))$   
 $(([c, d], [c, d]), ([c, d], [d, f]))$   
 $(([c, d], [c, d]), ([c, d], [e, c]))$   
 $(([c, d], [c, d]), ([c, d], [e, d]))$   
 $(([c, d], [c, d]), ([c, d], [e, f]))$   
 $(([c, d], [c, d]), ([c, d], [f, c]))$   
 $(([c, d], [c, d]), ([c, d], [f, d]))$   
 $(([c, d], [c, d]), ([c, d], [f, e]))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$   
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 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$   
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 $((\perp.\perp, \top.\perp), [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\perp, \top.\top])$   
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 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\perp, \top.\perp])$   
 $((\perp.\perp, \top.\perp), [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\top), (\perp.\perp, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\perp))$

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$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\perp, \top.\perp))$



$((\perp . \perp , \top . \top), (\perp . \top , \top . \top))$   
 $((\perp . \perp , \top . \top), (\perp . \perp , \top . \perp))$   
 $((\perp . \perp , \top . \top), (\perp . \perp , \top . \top))$   
 $((\perp . \perp , \top . \top), (\perp . \perp , \top . \top))$   
 $((\perp . \perp , \top . \top), (\perp . \top , \top . \perp))$   
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 $((\perp . \perp , \top . \top), (\perp . \perp , \top . \top))$   
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 $((\perp . \perp , \top . \top), (\perp . \top , \top . \top))$   
 $((\perp . \perp , \top . \top), (\perp . \top , \top . \perp))$   
 $((\perp . \perp , \top . \top), (\perp . \top , \top . \top))$   
 $((\perp . \top , \top . \perp), (\perp . \perp , \top . \perp))$   
 $((\perp . \top , \top . \perp), (\perp . \perp , \top . \top))$   
 $((\perp . \top , \top . \perp), (\perp . \perp , \top . \top))$   
 $((\perp . \top , \top . \perp), (\perp . \top , \top . \perp))$   
 $((\perp . \top , \top . \perp), (\perp . \top , \top . \top))$   
 $((\perp . \top , \top . \perp), (\perp . \top , \top . \top))$



$((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\Gamma, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\neg, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\neg, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\neg, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\Gamma, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\neg, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\neg, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\neg, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma), [\perp.\perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\Gamma), [\perp.\perp, \Gamma.\Gamma])$





$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\perp), (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\perp), (\perp.\perp, \top.\top))$   
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 $((\perp.\top, \top.\perp), [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\perp), [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\perp), [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\perp), [\perp.\top, \top.\top])$

((⌊.⌈, ⌈.⌊), ⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌊), ⌊.⌈, ⌈.⌊))  
((⌊.⌈, ⌈.⌊), ⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌊), ⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌊), ⌊.⌊, ⌈.⌊))  
((⌊.⌈, ⌈.⌊), ⌊.⌊, ⌈.⌈))  
((⌊.⌈, ⌈.⌊), ⌊.⌊, ⌈.⌈))  
((⌊.⌈, ⌈.⌊), ⌊.⌈, ⌈.⌊))  
((⌊.⌈, ⌈.⌊), ⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌊), ⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌊), ⌊.⌈, ⌈.⌊))  
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$$((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$$
$$((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$$
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$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
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$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\sqcup.\top, \sqcap.\top), [\sqcup.\bot, \sqcap.\bot])$$
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$$((\sqcup.\top, \top.\sqcup), [\sqcup.\top, \top.\sqcup])$$
$$((\sqcup.\top, \top.\top), [\sqcup.\top, \top.\top))$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$

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 $((\perp, \top, \top, \perp), (\perp, \perp, \top, \top))$   
 $((\perp, \top, \top, \perp), (\perp, \top, \top, \perp))$   
 $((\perp, \top, \top, \perp), (\perp, \top, \top, \top))$

$((\perp, \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\perp))$   
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 $((\perp, \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\top))$   
 $((\perp, \Gamma, \Gamma.\perp], (\perp.\perp, \Gamma.\perp])$   
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 $((\perp, \Gamma, \Gamma.\perp], (\perp.\perp, \Gamma.\top))$   
 $((\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\perp])$   
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 $((\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\top))$   
 $((\perp, \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\perp])$   
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 $((\perp, \Gamma, \Gamma.\perp], (\perp.\top, \Gamma.\top))$   
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 $((\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top))$   
 $((\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp))$   
 $((\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top))$   
 $((\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top))$   
 $((\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\perp))$   
 $((\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top))$   
 $((\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top))$   
 $((\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $((\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top))$   
 $((\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top))$   
 $((\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$

$((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\Gamma])$   
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 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\Gamma], [\perp.\perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma], [\perp.\perp, \Gamma.\Gamma))$











[illegible]





$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\perp])$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil]$$
 $([\perp, \cdot], [\cdot, \top]), ([\perp, \cdot], [\cdot, \top])$ 
$$([\perp.\perp, \top.\top), (\perp.\top, \top.\perp])$$
$$([\perp.\perp], [\top.\top]), ([\perp.\top], [\top.\top])$$
 $([\perp.\perp], \top.\top), (\perp.\top, \top.\perp])$ 
$$([\bot.\bot, \top.\top], [\bot.\top, \top.\bot])$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil)$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil]$$
$$([\perp.\perp, \top.\top), [\perp.\perp, \top.\perp))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$([\perp.\perp, \top.\top), [\perp.\perp, \top.\top))$$
$$([\perp \cdot \perp, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp \cdot \perp, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \perp, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp, \cdot], \Gamma, \Gamma), ([\perp, \cdot], \Gamma, \Gamma))$$
$$([\perp.\perp, \top.\top), [\perp.\top, \top.\top))$$
$$([\perp.\perp], [\top.\top]), [\perp.\perp], [\top.\perp])$$
$$([\perp.\perp, \top.\top], [\perp.\perp, \top.\top])$$
 $([\perp, \cdot], [\cdot, \top], [\perp, \cdot], [\cdot, \top])$







([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ]  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )





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$([1, 7], [7, 7]), [1, 1], [7, 7])$   
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 $([1, 1], [7, 1]), ([1, 7], [7, 7]))$   
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 $([1, 1], [7, 1]), ([1, 7], [7, 7]))$

$([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\perp}, \Gamma_{\perp}))$   
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 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\perp}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\top}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\top}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\top}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\neg}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\neg}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\neg}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\perp}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\perp}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\perp}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\top}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\top}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\top}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\neg}, \Gamma_{\perp}))$   
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 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\neg}, \Gamma_{\neg}))$   
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 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\perp}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\perp}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\top}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\top}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\top}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\neg}, \Gamma_{\perp}))$







[illegible]

([⊥ . Γ , Γ . ⊥] , [⊥ . γ , Γ . γ] )  
([⊥ . Γ , Γ . Γ] , (⊥ . ⊥ , Γ . ⊥) )  
([⊥ . Γ , Γ . Γ] , (⊥ . ⊥ , Γ . Γ) )  
([⊥ . Γ , Γ . Γ] , (⊥ . ⊥ , Γ . γ) )  
([⊥ . Γ , Γ . Γ] , (⊥ . Γ , Γ . ⊥) )  
([⊥ . Γ , Γ . Γ] , (⊥ . Γ , Γ . Γ) )  
([⊥ . Γ , Γ . Γ] , (⊥ . Γ , Γ . γ) )  
([⊥ . Γ , Γ . Γ] , (⊥ . γ , Γ . ⊥) )  
([⊥ . Γ , Γ . Γ] , (⊥ . γ , Γ . Γ) )  
([⊥ . Γ , Γ . Γ] , (⊥ . γ , Γ . γ) )  
([⊥ . Γ , Γ . Γ] , (⊥ . ⊥ , Γ . ⊥] )  
([⊥ . Γ , Γ . Γ] , (⊥ . ⊥ , Γ . Γ] )  
([⊥ . Γ , Γ . Γ] , (⊥ . ⊥ , Γ . γ] )  
([⊥ . Γ , Γ . Γ] , (⊥ . Γ , Γ . ⊥] )  
([⊥ . Γ , Γ . Γ] , (⊥ . Γ , Γ . Γ] )  
([⊥ . Γ , Γ . Γ] , (⊥ . Γ , Γ . γ] )  
([⊥ . Γ , Γ . Γ] , (⊥ . γ , Γ . ⊥] )  
([⊥ . Γ , Γ . Γ] , (⊥ . γ , Γ . Γ] )  
([⊥ . Γ , Γ . Γ] , (⊥ . γ , Γ . γ] )  
([⊥ . Γ , Γ . Γ] , [⊥ . ⊥ , Γ . ⊥) )  
([⊥ . Γ , Γ . Γ] , [⊥ . ⊥ , Γ . Γ) )  
([⊥ . Γ , Γ . Γ] , [⊥ . ⊥ , Γ . γ) )  
([⊥ . Γ , Γ . Γ] , [⊥ . Γ , Γ . ⊥) )  
([⊥ . Γ , Γ . Γ] , [⊥ . Γ , Γ . Γ) )  
([⊥ . Γ , Γ . Γ] , [⊥ . Γ , Γ . γ) )









[illegible]











$((\perp . \perp , \top . \top), [\perp . \top, \top . \perp])$   
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 $((\perp . \perp , \top . \top), [\perp . \top, \top . \top])$   
 $((\perp . \perp , \top . \top), [\perp . \top, \top . \perp])$   
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 $((\perp . \top, \top . \perp), (\perp . \top, \top . \top))$   
 $((\perp . \top, \top . \perp), (\perp . \perp , \top . \perp))$





((⌊ . Γ , Γ . Γ), [⌊ . Γ , Γ . ⌋ ))  
((⌊ . Γ , Γ . Γ), [⌊ . Γ , Γ . Γ))  
((⌊ . Γ , Γ . Γ), [⌊ . Γ , Γ . Γ ))  
((⌊ . Γ , Γ . Γ), [⌊ . ⌋ , Γ . ⌋ ))  
((⌊ . Γ , Γ . Γ), [⌊ . ⌋ , Γ . Γ))  
((⌊ . Γ , Γ . Γ), [⌊ . ⌋ , Γ . Γ ))  
((⌊ . Γ , Γ . Γ), [⌊ . Γ , Γ . ⌋ ))  
((⌊ . Γ , Γ . Γ), [⌊ . Γ , Γ . Γ))  
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((⌊ . Γ , Γ . Γ), [⌊ . Γ , Γ . ⌋ ))  
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((⌊ . Γ , Γ . Γ), (⌊ . Γ , Γ . ⌋ ))  
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((⌊ . Γ , Γ . Γ), (⌊ . ⌋ , Γ . ⌋ ))  
((⌊ . Γ , Γ . Γ), (⌊ . ⌋ , Γ . Γ))  
((⌊ . Γ , Γ . Γ), (⌊ . ⌋ , Γ . Γ ))  
((⌊ . Γ , Γ . Γ), (⌊ . Γ , Γ . ⌋ ))





$((\perp.\top, \top.\perp), [\perp.\perp, \top.\perp])$   
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 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$





$((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$   
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 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$

$((\perp . \perp , \top . \perp ], [\perp . \perp , \top . \perp ))$   
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 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \perp ))$





$((\perp.\perp, \top.\top], [\perp.\top, \top.\perp))$   
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$((\perp . \Gamma, \Gamma.\perp], [\perp.\neg, \neg.\neg])$   
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 $((\perp . \Gamma, \Gamma.\neg], (\perp.\Gamma, \neg.\perp))$   
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 $((\perp . \Gamma, \Gamma.\neg], (\perp.\Gamma, \neg.\neg))$   
 $((\perp . \Gamma, \Gamma.\neg], (\perp.\neg, \neg.\perp))$   
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 $((\perp . \Gamma, \Gamma.\neg], (\perp.\neg, \neg.\neg))$   
 $((\perp . \Gamma, \Gamma.\neg], (\perp.\perp, \neg.\perp])$   
 $((\perp . \Gamma, \Gamma.\neg], (\perp.\perp, \neg.\neg])$   
 $((\perp . \Gamma, \Gamma.\neg], (\perp.\perp, \neg.\neg])$   
 $((\perp . \Gamma, \Gamma.\neg], (\perp.\Gamma, \neg.\perp])$   
 $((\perp . \Gamma, \Gamma.\neg], (\perp.\Gamma, \neg.\neg])$   
 $((\perp . \Gamma, \Gamma.\neg], (\perp.\neg, \neg.\perp])$   
 $((\perp . \Gamma, \Gamma.\neg], (\perp.\neg, \neg.\neg])$   
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 $((\perp . \Gamma, \Gamma.\neg], [\perp.\perp, \neg.\neg))$   
 $((\perp . \Gamma, \Gamma.\neg], [\perp.\Gamma, \neg.\perp))$   
 $((\perp . \Gamma, \Gamma.\neg], [\perp.\Gamma, \neg.\neg))$   
 $((\perp . \Gamma, \Gamma.\neg], [\perp.\Gamma, \neg.\neg))$

((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Π,⌊.⌋,Γ.⌋))  
 ((⌊.Γ,Γ.Π,⌊.⌋,Γ.Γ))  
 ((⌊.Γ,Γ.Π,⌊.⌋,Γ.Γ))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.⌋))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.⌋))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.⌋))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.⌋))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.⌋,Γ.Γ))  
 ((⌊.Γ,Γ.Γ,⌊.Γ,Γ.⌋))

$$((\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \top])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil], (\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil], (\lfloor \cdot \rceil, \lceil \cdot \rfloor])$$
$$((\perp, \top, \top, \top], (\perp, \top, \top, \top])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil], (\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\sqcup, \sqcap, \sqcap.\sqcup], [\sqcup, \sqcup, \sqcap.\sqcap))$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top))$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil], [\lfloor \cdot \rfloor, \lfloor \cdot \rfloor))$$
$$((\sqcup, \sqcap, \sqcap, \sqcup), [\sqcup, \sqcap, \sqcap, \sqcup])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\sqcup, \sqcap, \sqcap.\sqcap], [\sqcup.\sqcup, \sqcap.\sqcup])$$
$$((\sqcup, \sqcap, \sqcap.\sqcap], [\sqcup.\sqcup, \sqcap.\sqcap])$$
$$((\perp, \top, \top, \top], [\perp, \perp, \top, \top])$$
$$((\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$((\perp \cdot \top, \top \cdot \top), [\perp \cdot \top, \top \cdot \top])$$
$$((\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rceil, \lceil \cdot \rfloor])$$
$$((\sqcup, \sqcap, \sqcap.\sqcup], [\sqcup.\sqcap, \sqcap.\sqcap])$$
$$((\perp.\top, \top.\top], [\perp.\top, \top.\top])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$((\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$$

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((\ .\ , \ .\ ], (\ .\ , \ .\ ]))





















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$([\perp.\top], [\top.\top]), ([\perp.\top], [\top.\top])$  $([\perp.\top, \top.\top], [\perp.\perp, \top.\perp])$  $([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$  $([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$ 
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor)$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor)$$
 $([\perp.\top, \top.\top], [\perp.\top, \top.\top])$  $([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$  $([\perp.\top, \top.\top], [\perp.\top, \top.\top])$  $([\perp.\top, \top.\top], [\perp.\top, \top.\top])$ 
$$([\perp.\top, \top.\top), [\perp.\bot, \top.\bot]))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$([\perp.\top, \top.\top), [\perp.\perp, \top.\top))$$
$$([\perp.\top, \top.\top), [\perp.\top, \top.\perp]))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
 $([\perp.\top, \top.\top), [\perp.\top, \top.\top))$ 
$$([\perp.\top, \top.\top), [\perp.\top, \top.\perp))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
 $([\perp.\top, \top.\top], [\perp.\perp, \top.\perp])$  $([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$  $([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$  $([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$ 
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil]$$
 $([\perp.\top, \top.\top], [\perp.\top, \top.\top])$

$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$   
 $([\perp.\top, \top.\top], [\perp.\top, \top.\top])$   
 $([\perp.\top, \top.\top], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$









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$$(\lceil \cdot \rceil, \lceil \cdot \rceil, (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil, (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil, (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$(\lceil \cdot \rceil, \rceil \cdot \rfloor, (\lceil \cdot \rfloor, \rceil \cdot \lceil))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil, (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$([\perp.\top, \top.\top], ([\perp.\perp, \top.\perp]))$$
$$([\perp, \top, \top, \top], ([\perp, \perp], \top, \top))$$
$$([\bot, \top, \top, \top], ([\bot, \bot], [\top, \top]))$$
$$([\perp \cdot \top, \top \cdot \top], ([\perp \cdot \top, \top \cdot \perp]))$$
$$([\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \top])$$
$$([\perp.\top, \top.\top], [\perp.\bot, \top.\perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \perp]))$$
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$$([\sqcup, \sqcap, \sqcap, \sqcup], [\sqcup, \sqcap, \sqcap, \sqcup])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top]))$$
$$([\sqcup, \sqcap, \sqcap, \sqcup], [\sqcup, \sqcap, \sqcup, \sqcap])$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil, \lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$([\sqcup, \sqcap, \sqcap, \sqcap], [\sqcup, \sqcap, \sqcap, \sqcap])$$
$$([\sqcup \cdot \sqcap, \sqcap \cdot \sqcup], [\sqcup \cdot \sqcup, \sqcap \cdot \sqcap])$$

([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ])  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ])  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ))  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], ( $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ])

[illegible]

$([1, 7], [1, 1], [1, 7], [1, 1])$   
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 $([1, 7], [1, 1], [1, 1], [1, 1])$   
 $([1, 7], [1, 1], [1, 1], [1, 7])$   
 $([1, 7], [1, 1], [1, 1], [1, 7])$   
 $([1, 7], [1, 1], [1, 7], [1, 1])$   
 $([1, 7], [1, 1], [1, 7], [1, 7])$   
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 $([1, 7], [1, 1], [1, 7], [1, 7])$   
 $([1, 7], [1, 1], [1, 7], [1, 7])$   
 $([1, 7], [1, 1], [1, 1], [1, 1])$   
 $([1, 7], [1, 1], [1, 1], [1, 7])$   
 $([1, 7], [1, 1], [1, 1], [1, 7])$   
 $([1, 7], [1, 1], [1, 7], [1, 1])$   
 $([1, 7], [1, 1], [1, 7], [1, 7])$   
 $([1, 7], [1, 1], [1, 7], [1, 7])$   
 $([1, 7], [1, 1], [1, 1], [1, 1])$   
 $([1, 7], [1, 1], [1, 1], [1, 7])$   
 $([1, 7], [1, 1], [1, 1], [1, 7])$   
 $([1, 7], [1, 1], [1, 7], [1, 1])$   
 $([1, 7], [1, 1], [1, 7], [1, 7])$   
 $([1, 7], [1, 1], [1, 1], [1, 1])$   
 $([1, 7], [1, 1], [1, 1], [1, 7])$   
 $([1, 7], [1, 1], [1, 1], [1, 7])$   
 $([1, 7], [1, 1], [1, 7], [1, 1])$







[illegible]

$((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\perp, \top.\perp])$   
 $((\perp.\perp, \top.\perp), [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\top), (\perp.\perp, \top.\top))$





$((\perp . \perp , \top . \top), [\perp . \top , \top . \top])$

$((\perp . \perp , \top . \top), [\perp . \top , \top . \top])$

$((\perp . \perp , \top . \top), [\perp . \perp , \top . \perp])$

$((\perp . \perp , \top . \top), [\perp . \perp , \top . \top])$

$((\perp . \perp , \top . \top), [\perp . \perp , \top . \top])$

$((\perp . \perp , \top . \top), [\perp . \top , \top . \perp])$

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$((\perp . \perp , \top . \top), [\perp . \top , \top . \top])$

$((\perp . \perp , \top . \top), [\perp . \top , \top . \perp])$

$((\perp . \perp , \top . \top), [\perp . \top , \top . \top])$

$((\perp . \perp , \top . \top), [\perp . \top , \top . \top])$

$((\perp . \top , \top . \perp), (\perp . \perp , \top . \perp))$

$((\perp . \top , \top . \perp), (\perp . \perp , \top . \top))$

$((\perp . \top , \top . \perp), (\perp . \perp , \top . \top))$

$((\perp . \top , \top . \perp), (\perp . \top , \top . \perp))$

$((\perp . \top , \top . \perp), (\perp . \top , \top . \top))$

$((\perp . \top , \top . \perp), (\perp . \top , \top . \top))$

$((\perp . \top , \top . \perp), (\perp . \top , \top . \perp))$

$((\perp . \top , \top . \perp), (\perp . \top , \top . \top))$

$((\perp . \top , \top . \perp), (\perp . \top , \top . \top))$

$((\perp . \top , \top . \perp), (\perp . \perp , \top . \perp])$

$((\perp . \top , \top . \perp), (\perp . \perp , \top . \top])$

$((\perp . \top , \top . \perp), (\perp . \perp , \top . \top])$

$((\perp . \top , \top . \perp), (\perp . \top , \top . \perp])$

$((\perp . \top , \top . \perp), (\perp . \top , \top . \top])$

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$((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\perp])$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$

$((\perp . \perp , \top . \perp ], [\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \perp ], [\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \perp ], [\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \perp ], [\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \perp ], [\perp . \top , \top . \top ))$   
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 $((\perp . \perp , \top . \perp ], [\perp . \perp , \top . \top ])$   
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 $((\perp . \perp , \top . \perp ], [\perp . \top , \top . \perp ])$   
 $((\perp . \perp , \top . \perp ], [\perp . \top , \top . \top ])$   
 $((\perp . \perp , \top . \top ], (\perp . \perp , \top . \perp ))$   
 $((\perp . \perp , \top . \top ], (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ], (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ], (\perp . \perp , \top . \perp ])$   
 $((\perp . \perp , \top . \top ], (\perp . \perp , \top . \top ])$









((⌊ . Γ , Γ . Π , (⌊ . Γ , Γ . ⊥ ) )  
((⌊ . Γ , Γ . Π , (⌊ . Γ , Γ . Γ ) )  
((⌊ . Γ , Γ . Π , (⌊ . Γ , Γ . ⊔ ) )  
((⌊ . Γ , Γ . Π , (⌊ . ⊔ , Γ . ⊥ ) )  
((⌊ . Γ , Γ . Π , (⌊ . ⊔ , Γ . Γ ) )  
((⌊ . Γ , Γ . Π , (⌊ . ⊔ , Γ . ⊔ ) )  
((⌊ . Γ , Γ . Π , (⌊ . ⊥ , Γ . ⊥ ) )  
((⌊ . Γ , Γ . Π , (⌊ . ⊥ , Γ . Γ ) )  
((⌊ . Γ , Γ . Π , (⌊ . ⊥ , Γ . ⊔ ) )  
((⌊ . Γ , Γ . Π , (⌊ . Γ , Γ . ⊥ ) )  
((⌊ . Γ , Γ . Π , (⌊ . Γ , Γ . Γ ) )  
((⌊ . Γ , Γ . Π , (⌊ . Γ , Γ . ⊔ ) )  
((⌊ . Γ , Γ . Π , (⌊ . ⊔ , Γ . ⊥ ) )  
((⌊ . Γ , Γ . Π , (⌊ . ⊔ , Γ . Γ ) )  
((⌊ . Γ , Γ . Π , (⌊ . ⊔ , Γ . ⊔ ) )  
((⌊ . Γ , Γ . Π , [⌊ . ⊥ , Γ . ⊥ ] ) )  
((⌊ . Γ , Γ . Π , [⌊ . ⊥ , Γ . Γ ] ) )  
((⌊ . Γ , Γ . Π , [⌊ . ⊥ , Γ . ⊔ ] ) )  
((⌊ . Γ , Γ . Π , [⌊ . Γ , Γ . ⊥ ] ) )  
((⌊ . Γ , Γ . Π , [⌊ . Γ , Γ . Γ ] ) )  
((⌊ . Γ , Γ . Π , [⌊ . Γ , Γ . ⊔ ] ) )  
((⌊ . Γ , Γ . Π , [⌊ . ⊔ , Γ . ⊥ ] ) )  
((⌊ . Γ , Γ . Π , [⌊ . ⊔ , Γ . Γ ] ) )  
((⌊ . Γ , Γ . Π , [⌊ . ⊔ , Γ . ⊔ ] ) )  
((⌊ . Γ , Γ . Π , [⌊ . ⊥ , Γ . ⊥ ] ) )



$$((\perp, \top, \top, \top], (\perp, \top, \top, \top])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil], [\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lceil \cdot \rceil, \rceil \cdot \rceil), [\lceil \cdot \rceil, \rceil \cdot \rceil))$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\sqcup, \sqcap, \sqcap.\sqcap], [\sqcup.\sqcup, \sqcap.\sqcap])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\perp \cdot \top, \top \cdot \top), [\perp \cdot \top, \top \cdot \perp])$$
$$((\perp \cdot \top, \top \cdot \top), [\perp \cdot \top, \top \cdot \top])$$
$$((\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$((\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$((\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$((\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil], (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$((\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$$
$$((\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$$
$$((\perp.\top, \top.\perp], (\perp.\top, \top.\perp))$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$((\perp.\top, \top.\perp], (\perp.\top, \top.\top))$$

$((\perp.\top, \top.\perp], (\perp.\top, \top.\perp))$   
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 $((\perp.\top, \top.\perp], (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\perp], (\perp.\top, \top.\top))$   
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 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$





((א.ה, א.ה], [א.א, א.א])  
((א.ה, א.ה], [א.א, א.א])  
((א.ה, א.ה], [א.א, א.ה])  
((א.ה, א.ה], [א.א, א.א])  
((א.ה, א.ה], [א.א, א.א])  
((א.ה, א.ה], [א.א, א.ה])  
((א.ה, א.ה], [א.ה, א.א])  
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((א.ה, א.ה], [א.ה, א.ה])  
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((א.ה, א.ה], [א.א, א.ה]))  
((א.ה, א.ה], [א.א, א.א]))  
((א.ה, א.ה], [א.א, א.ה]))  
((א.ה, א.ה], [א.א, א.א]))  
((א.ה, א.ה], [א.ה, א.א]))  
((א.ה, א.ה], [א.ה, א.א]))  
((א.ה, א.ה], [א.ה, א.ה]))  
((א.ה, א.ה], [א.א, א.א])  
((א.ה, א.ה], [א.א, א.א])  
((א.ה, א.ה], [א.א, א.ה])  
((א.ה, א.ה], [א.א, א.א])  
((א.ה, א.ה], [א.א, א.ה])  
((א.ה, א.ה], [א.ה, א.א])



$([\perp] . \perp , \top . \perp ), [\perp] . \top , \top . \top )$   
 $([\perp] . \perp , \top . \perp ), [\perp] . \top , \top . \perp )$   
 $([\perp] . \perp , \top . \perp ), [\perp] . \top , \top . \top )$   
 $([\perp] . \perp , \top . \perp ), [\perp] . \top , \top . \top )$   
 $([\perp] . \perp , \top . \perp ), [\perp] . \perp , \top . \perp )$   
 $([\perp] . \perp , \top . \perp ), [\perp] . \perp , \top . \top )$   
 $([\perp] . \perp , \top . \perp ), [\perp] . \perp , \top . \top )$   
 $([\perp] . \perp , \top . \perp ), [\perp] . \top , \top . \perp )$   
 $([\perp] . \perp , \top . \perp ), [\perp] . \top , \top . \top )$   
 $([\perp] . \perp , \top . \perp ), [\perp] . \top , \top . \perp )$   
 $([\perp] . \perp , \top . \perp ), [\perp] . \top , \top . \top )$   
 $([\perp] . \perp , \top . \perp ), [\perp] . \top , \top . \top )$   
 $([\perp] . \perp , \top . \top ), (\perp . \perp , \top . \top )$   
 $([\perp] . \perp , \top . \top ), (\perp . \perp , \top . \top )$   
 $([\perp] . \perp , \top . \top ), (\perp . \top , \top . \perp )$   
 $([\perp] . \perp , \top . \top ), (\perp . \top , \top . \top )$   
 $([\perp] . \perp , \top . \top ), (\perp . \top , \top . \top )$   
 $([\perp] . \perp , \top . \top ), (\perp . \top , \top . \perp )$   
 $([\perp] . \perp , \top . \top ), (\perp . \top , \top . \top )$   
 $([\perp] . \perp , \top . \top ), (\perp . \top , \top . \top )$   
 $([\perp] . \perp , \top . \top ), (\perp . \perp , \top . \perp )$   
 $([\perp] . \perp , \top . \top ), (\perp . \perp , \top . \top )$   
 $([\perp] . \perp , \top . \top ), (\perp . \perp , \top . \top )$   
 $([\perp] . \perp , \top . \top ), (\perp . \perp , \top . \top )$











$(\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \Gamma])$   
 $(\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \neg ])$   
 $(\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg , \Gamma . \neg ])$   
 $(\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg , \Gamma . \Gamma])$   
 $(\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg , \Gamma . \neg ])$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \neg , \Gamma . \neg ))$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \neg , \Gamma . \Gamma))$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \neg , \Gamma . \neg ))$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \Gamma, \Gamma . \neg ))$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \Gamma, \Gamma . \Gamma))$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \Gamma, \Gamma . \neg ))$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \neg , \Gamma . \neg ))$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \neg , \Gamma . \Gamma))$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \neg , \Gamma . \neg ))$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \neg , \Gamma . \neg ])$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \neg , \Gamma . \Gamma)]$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \Gamma, \Gamma . \neg ])$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \Gamma, \Gamma . \Gamma)]$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \neg , \Gamma . \neg ])$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \neg , \Gamma . \Gamma)]$   
 $(\perp . \Gamma, \Gamma . \neg ), (\neg . \neg , \Gamma . \neg ])$   
 $(\perp . \Gamma, \Gamma . \neg ), [\neg . \neg , \Gamma . \neg ])$   
 $(\perp . \Gamma, \Gamma . \neg ), [\neg . \neg , \Gamma . \Gamma)]$









$([1, 7], [7, 7]), ([1, 7], [7, 1])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 1])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 1], [7, 1])$   
 $([1, 7], [7, 7]), ([1, 1], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 1], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 1])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 1])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 1], [7, 1])$   
 $([1, 7], [7, 7]), ([1, 1], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 1], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 1])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 7])$   
 $([1, 7], [7, 7]), ([1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 1], [7, 1])$







([1.1, 1.7], [1.7, 1.7])  
([1.1, 1.7], [1.7, 1.7])  
([1.1, 1.7], [1.7, 1.1])  
([1.1, 1.7], [1.7, 1.7])  
([1.1, 1.7], [1.7, 1.7])  
([1.1, 1.7], [1.1, 1.1])  
([1.1, 1.7], [1.1, 1.7])  
([1.1, 1.7], [1.1, 1.7])  
([1.1, 1.7], [1.7, 1.1])  
([1.1, 1.7], [1.7, 1.7])  
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([1.1, 1.7], [1.7, 1.7])  
([1.1, 1.7], [1.7, 1.7])  
([1.1, 1.7], [1.7, 1.1])  
([1.1, 1.7], [1.7, 1.7])  
([1.1, 1.7], [1.1, 1.1])  
([1.1, 1.7], [1.1, 1.7])  
([1.1, 1.7], [1.7, 1.1])  
([1.1, 1.7], [1.7, 1.7])  
([1.1, 1.7], [1.7, 1.7])  
([1.1, 1.7], [1.7, 1.1])  
([1.1, 1.7], [1.7, 1.7])  
([1.1, 1.7], [1.1, 1.1])  
([1.1, 1.7], [1.1, 1.7])

$$([\perp.\perp], [\top.\top]), [\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top]), [\perp.\top, \top.\perp])$$
$$([\perp.\perp], [\top.\top]), [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top]), [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top]), [\perp.\top], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), [\perp.\top], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), [\perp.\top], [\top.\top])$$
$$([\perp, \top, \top, \perp], (\perp, \perp, \top, \perp))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \perp, \top \cdot \top))$$
 $([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \perp, \top \cdot \top))$ 
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \perp))$$
$$([\perp \cdot \Gamma, \Gamma \cdot \perp], (\perp \cdot \Gamma, \Gamma \cdot \Gamma))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp, \top, \top, \perp], ([\perp, \top, \top, \perp]))$$
$$([\perp, \top, \top, \perp], (\perp, \top, \top, \perp))$$
$$([\perp.\top, \top.\perp], (\perp.\top, \top.\top))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \perp, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \perp, \top \cdot \top))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \perp, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$$
$$([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$$
 $([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$



([⊥ . Γ , Γ . Γ] , ([⊥ . γ , Γ . Γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . γ , Γ . γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . ⊥ , Γ . ⊥]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . ⊥ , Γ . Γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . ⊥ , Γ . γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . Γ , Γ . ⊥]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . Γ , Γ . Γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . Γ , Γ . γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . γ , Γ . ⊥]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . γ , Γ . Γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . γ , Γ . γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . ⊥ , Γ . ⊥]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . ⊥ , Γ . Γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . ⊥ , Γ . γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . Γ , Γ . ⊥]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . Γ , Γ . Γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . Γ , Γ . γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . γ , Γ . ⊥]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . γ , Γ . Γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . γ , Γ . γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . ⊥ , Γ . ⊥]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . ⊥ , Γ . Γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . ⊥ , Γ . γ]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . Γ , Γ . ⊥]))  
([⊥ . Γ , Γ . Γ] , ([⊥ . Γ , Γ . Γ]))







[illegible]



$([a, b], [c, d])$

$([a, b], [c, e])$

$([a, b], [c, f])$

$([a, b], [d, e])$

$([a, b], [d, f])$

$([a, b], [e, f])$

$([a, c], [d, e])$

$([a, c], [d, f])$

$([a, c], [e, f])$

$([a, d], [e, f])$

$([a, e], [b, c])$

$([a, e], [b, d])$

$([a, e], [b, e])$

$([a, e], [b, f])$

$([a, e], [c, d])$

$([a, e], [c, e])$

$([a, e], [c, f])$

$([a, e], [d, e])$

$([a, e], [d, f])$

$([a, e], [e, f])$

$([a, f], [b, c])$

$([a, f], [b, d])$

$([a, f], [b, e])$

$[74]. ([a, b], [c, d], [e, f])$

$(([a, b], [c, d]), ([e, f], [g, h]))$



$((\perp . \perp , \top . \perp ), [\perp . \top , \top . \top ])$   
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 $((\perp . \perp , \top . \perp ), [\perp . \perp , \top . \top ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \perp , \top . \top ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \perp ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \top ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \top ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \perp ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \top ])$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \perp ])$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \top ])$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \top ])$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \perp ])$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ])$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ])$



((⌊.⌋, ⌈.⌈), (⌊.⌈, ⌈.⌈))  
((⌊.⌋, ⌈.⌈), (⌊.⌈, ⌈.⌈))  
((⌊.⌋, ⌈.⌈), (⌊.⌈, ⌈.⌋))  
((⌊.⌋, ⌈.⌈), (⌊.⌈, ⌈.⌈))  
((⌊.⌋, ⌈.⌈), (⌊.⌈, ⌈.⌈))  
((⌊.⌋, ⌈.⌈), (⌊.⌋, ⌈.⌋))  
((⌊.⌋, ⌈.⌈), (⌊.⌋, ⌈.⌈))  
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((⌊.⌋, ⌈.⌈), (⌊.⌈, ⌈.⌋))  
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((⌊.⌋, ⌈.⌈), (⌊.⌈, ⌈.⌋))  
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((⌊.⌋, ⌈.⌈), (⌊.⌋, ⌈.⌋))  
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((⌊.⌋, ⌈.⌈), (⌊.⌋, ⌈.⌈))  
((⌊.⌋, ⌈.⌈), (⌊.⌈, ⌈.⌋))  
((⌊.⌋, ⌈.⌈), (⌊.⌈, ⌈.⌈))  
((⌊.⌋, ⌈.⌈), (⌊.⌈, ⌈.⌋))  
((⌊.⌋, ⌈.⌈), (⌊.⌈, ⌈.⌈))  
((⌊.⌋, ⌈.⌈), (⌊.⌋, ⌈.⌋))  
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 $((\perp.\top, \top.\perp), (\perp.\top, \top.\top))$

$((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\perp])$   
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 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\Gamma])$   
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 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\perp])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp \cdot \Gamma, \Gamma.\Gamma])$   
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 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\perp])$   
 $((\perp \cdot \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\Gamma])$   
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 $((\perp \cdot \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\Gamma))$   
 $((\perp \cdot \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\neg))$   
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 $((\perp \cdot \Gamma, \Gamma.\Gamma), (\perp.\neg, \Gamma.\perp))$

((⌊ . Γ , Γ . Γ), (⌊ . Γ , Γ . Γ))  
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$((\perp.\top, \top.\perp), [\perp.\top, \top.\top])$   
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[illegible]

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 $((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$





$((\perp, \perp, \top, \top), (\perp, \perp, \top, \top))$   
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$((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\perp))$   
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$$((\sqcup, \sqcap, \sqcap, \sqcap], [\sqcup, \sqcap, \sqcap, \sqcap])$$
$$((\lceil \cdot \rceil, \rceil \cdot \rceil, [\lceil \cdot \rceil, \rceil \cdot \rceil])$$
$$((\lceil \cdot \rceil, \lceil \cdot \rceil), [\lceil \cdot \rceil, \lceil \cdot \rceil])$$
$$((\lceil \cdot \rceil, \rceil \cdot \rceil), [\lceil \cdot \rceil, \rceil \cdot \rceil])$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil], (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$((\sqcup, \sqcap, \sqcup, \sqcap], (\sqcup, \sqcap, \sqcup, \sqcap))$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil], (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$((\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \perp))$$
$$((\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \top))$$
$$((\perp.\top, \top.\top], (\perp.\top, \top.\top))$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
$$((\sqcup, \sqcap, \sqcap.\sqcap], (\sqcup.\sqcap, \sqcap.\sqcap))$$
$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil], (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
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$$((\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \top])$$
$$((\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \top])$$
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$$((\lfloor \cdot \rfloor, \lceil \cdot \rceil), [\lfloor \cdot \rfloor, \lceil \cdot \rceil])$$
$$((\lceil \cdot \rceil, \rceil \cdot \rfloor), [\lceil \cdot \rfloor, \rceil \cdot \rceil))$$
$$((\perp, \top, \top, \top], [\perp, \perp, \top, \top))$$

((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.⌊))  
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((⌊.Γ, Γ.⌊], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], ⌊.⌊, Γ.⌊])









[illegible]

$([\perp . \perp , \top . \perp ], [\perp . \perp , \top . \perp ])$   
 $([\perp . \perp , \top . \perp ], [\perp . \perp , \top . \top ])$   
 $([\perp . \perp , \top . \perp ], [\perp . \perp , \top . \top ])$   
 $([\perp . \perp , \top . \perp ], [\perp . \top , \top . \perp ])$   
 $([\perp . \perp , \top . \perp ], [\perp . \top , \top . \top ])$   
 $([\perp . \perp , \top . \perp ], [\perp . \top , \top . \top ])$   
 $([\perp . \perp , \top . \perp ], [\perp . \top , \top . \perp ])$   
 $([\perp . \perp , \top . \perp ], [\perp . \top , \top . \top ])$   
 $([\perp . \perp , \top . \top ], (\perp . \perp , \top . \top ))$   
 $([\perp . \perp , \top . \top ], (\perp . \perp , \top . \top ))$   
 $([\perp . \perp , \top . \top ], (\perp . \top , \top . \perp ))$   
 $([\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $([\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $([\perp . \perp , \top . \top ], (\perp . \top , \top . \perp ))$   
 $([\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $([\perp . \perp , \top . \top ], (\perp . \perp , \top . \perp ))$   
 $([\perp . \perp , \top . \top ], (\perp . \perp , \top . \top ))$   
 $([\perp . \perp , \top . \top ], (\perp . \perp , \top . \top ))$   
 $([\perp . \perp , \top . \top ], (\perp . \top , \top . \perp ))$   
 $([\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $([\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$   
 $([\perp . \perp , \top . \top ], (\perp . \top , \top . \top ))$









$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \perp])$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
 $([\perp \cdot \top, \top \cdot \top], [\perp \cdot \bot, \top \cdot \bot])$ 
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \perp])$$
$$([\perp, \top, \top, \top], [\perp, \perp, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top), [\perp \cdot \top, \top \cdot \perp])$$
$$(\llbracket \cdot \rrbracket, \vdash, \vdash), (\llbracket \cdot \rrbracket, \vdash, \vdash))$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \bot, \top \cdot \perp])$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \perp])$$
$$([\sqcup, \sqcap, \sqcup, \sqcap], [\sqcup, \sqcap, \sqcup, \sqcap])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \top])$$
$$(\llbracket \cdot \rrbracket, \vdash, \vdash), (\llbracket \cdot \rrbracket, \vdash, \vdash)$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\sqcup, \sqcap, \sqcap, \sqcup], [\sqcup, \sqcap, \sqcap, \sqcup])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \bot, \top \cdot \top])$$







([ $\perp$ ],  $\top$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ,  $\top$ ))  
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([ $\perp$ ], [ $\top$ ]), ([ $\perp$ ], [ $\top$ ])  
([ $\perp$ ], [ $\top$ ]), ([ $\perp$ ], [ $\perp$ ])



$([\perp] . \perp, \Gamma . \perp], (\perp . \Gamma, \Gamma . \neg))$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \neg, \Gamma . \perp))$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \neg, \Gamma . \neg))$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \neg, \Gamma . \neg))$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \perp, \Gamma . \perp])$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \perp, \Gamma . \neg))$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \perp, \Gamma . \neg])$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \Gamma, \Gamma . \perp])$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \Gamma, \Gamma . \neg))$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \Gamma, \Gamma . \neg])$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \neg, \Gamma . \perp])$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \neg, \Gamma . \neg))$   
 $([\perp] . \perp, \Gamma . \perp], (\perp . \neg, \Gamma . \neg])$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \perp, \Gamma . \perp])$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \perp, \Gamma . \neg))$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \perp, \Gamma . \neg])$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \Gamma, \Gamma . \perp])$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \Gamma, \Gamma . \neg))$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \Gamma, \Gamma . \neg])$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \neg, \Gamma . \perp])$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \neg, \Gamma . \neg])$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \neg, \Gamma . \neg])$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \perp, \Gamma . \perp])$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \perp, \Gamma . \neg])$   
 $([\perp] . \perp, \Gamma . \perp], [\perp . \perp, \Gamma . \neg])$







$$\begin{aligned}
& ([\perp, \perp], [\perp, \top], [\perp, \top], [\perp, \perp]) \\
& ([\perp, \perp], [\perp, \top], [\perp, \top], [\perp, \top]) \\
& ([\perp, \perp], [\perp, \top], [\perp, \top], [\perp, \top]) \\
& ([\perp, \perp, \perp, \perp], (\perp, \perp, \perp, \perp)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \perp, \perp, \top)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \perp, \perp, \top)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \perp, \top, \perp)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \perp, \top, \top)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \top, \perp, \top)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \top, \top, \perp)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \top, \top, \top)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \top, \top, \top)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \perp, \perp, \perp)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \perp, \perp, \top)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \perp, \perp, \top)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \perp, \top, \perp)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \perp, \top, \top)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \top, \perp, \top)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \top, \top, \perp)) \\
& ([\perp, \perp, \perp, \perp], (\perp, \top, \top, \top)) \\
& ([\perp, \perp, \perp, \perp], [\perp, \perp, \perp, \perp]) \\
& ([\perp, \perp, \perp, \perp], [\perp, \perp, \perp, \top]) \\
& ([\perp, \perp, \perp, \perp], [\perp, \perp, \perp, \top]) \\
& ([\perp, \perp, \perp, \perp], [\perp, \perp, \top, \perp]) \\
& ([\perp, \perp, \perp, \perp], [\perp, \perp, \top, \top])
\end{aligned}$$

([⊥ . Γ , Γ . ⊥ ] , [⊥ . Γ , Γ . Γ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . Γ , Γ . ⊔ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . ⊔ , Γ . ⊥ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . ⊔ , Γ . Γ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . ⊔ , Γ . ⊔ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . ⊥ , Γ . ⊥ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . ⊥ , Γ . Γ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . ⊥ , Γ . ⊔ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . Γ , Γ . ⊥ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . Γ , Γ . Γ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . Γ , Γ . ⊔ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . ⊔ , Γ . ⊥ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . ⊔ , Γ . Γ ] )  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . ⊔ , Γ . ⊔ ] )  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊥ , Γ . ⊥ ) )  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊥ , Γ . Γ ) )  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊥ , Γ . ⊔ ) )  
([⊥ . Γ , Γ . Γ ] , (⊥ . Γ , Γ . ⊥ ) )  
([⊥ . Γ , Γ . Γ ] , (⊥ . Γ , Γ . Γ ) )  
([⊥ . Γ , Γ . Γ ] , (⊥ . Γ , Γ . ⊔ ) )  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊔ , Γ . ⊥ ) )  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊔ , Γ . Γ ) )  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊔ , Γ . ⊔ ) )  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊥ , Γ . ⊥ ] )  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊥ , Γ . Γ ] )





([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ))  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ])  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ])  
([ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ], ( $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ))  
([ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ], ( $\neg$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ], ( $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ))  
([ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ], ( $\neg$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ))  
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([ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ], ( $\neg$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ))  
([ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ], ( $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ))  
([ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ], ( $\neg$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ))  
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([ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ], ( $\neg$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ))  
([ $\neg$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ], ( $\neg$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ])  
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([1.7, 1.7], [1.1, 1.7])





$([a, b], [a, b])$

$([a, b], [a, c])$

$([a, b], [a, d])$

$([a, b], [a, e])$

$([a, b], [c, a])$

$([a, b], [c, d])$

$([a, b], [c, e])$

$([a, b], [b, a])$

$([a, b], [b, d])$

$([a, b], [b, e])$

$([a, b], [c, a])$

$([a, b], [c, d])$

$([a, b], [c, e])$

$([a, b], [c, a])$

$([a, b], [c, d])$

$([a, b], [c, e])$

$([a, b], [b, a])$

$([a, b], [b, d])$

$([a, b], [b, e])$

75.  $([a, d], [c, d])$

$([a, c], [a, c])$

$([a, c], [a, d])$

$([a, c], [a, e])$

$([a, c], [c, a])$

$([a, c], [c, d])$



$((\perp.\perp, \top.\perp), [\perp.\top, \top.\perp])$

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$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), [\perp.\perp, \top.\perp])$







$((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \perp, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \perp, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp . \perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp . \perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp . \perp, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp . \Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp . \Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp . \Gamma, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp . \neg, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp . \neg, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp . \neg, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp . \perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp . \perp, \Gamma.\Gamma))$

$((\perp . \Gamma, \Gamma . \Gamma), (\perp . \perp, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Gamma), (\perp . \Gamma, \Gamma . \perp))$   
 $((\perp . \Gamma, \Gamma . \Gamma), (\perp . \Gamma, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \Gamma), (\perp . \Gamma, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Gamma), (\perp . \neg, \Gamma . \perp))$   
 $((\perp . \Gamma, \Gamma . \Gamma), (\perp . \neg, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \Gamma), (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \perp, \Gamma . \perp])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \perp, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \perp, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \perp])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \perp])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \perp, \Gamma . \perp])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \perp, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \perp, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \perp])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \Gamma])$   
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 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \perp])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \neg])$



$((\perp, \top, \top), [\perp, \top, \top])$

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$((\perp, \top, \perp), (\perp, \top, \top))$





$((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$   
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 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$

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 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
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 $((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$   
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 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$











$((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \perp, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp], [\perp . \Gamma, \Gamma.\Gamma))$   
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 $((\perp . \Gamma, \Gamma.\perp], [\perp . \neg, \Gamma.\perp])$   
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 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \perp, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \Gamma, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \neg, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \neg, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \neg, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\Gamma], (\perp . \perp, \Gamma.\Gamma])$

((⌊.Γ,Γ.Π,⌊.⌋,Γ.Γ))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Π))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Π))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
((⌊.Γ,Γ.Π,⌊.⌋,Γ.⌋))  
((⌊.Γ,Γ.Π,⌊.⌋,Γ.Π))  
((⌊.Γ,Γ.Π,⌊.⌋,Γ.Γ))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Π))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Π))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
((⌊.Γ,Γ.Π,⌊.⌋,Γ.⌋))  
((⌊.Γ,Γ.Π,⌊.⌋,Γ.Π))  
((⌊.Γ,Γ.Π,⌊.⌋,Γ.Γ))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Π))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Π))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))









((א.ה, ב.ב), (א.א, ב.ב))  
 ((א.ה, ב.ב), (א.א, ב.ה))  
 ((א.ה, ב.ב), (א.ב, ב.א))  
 ((א.ה, ב.ב), (א.ב, ב.ב))  
 ((א.ה, ב.ב), (א.ב, ב.ה))  
 ((א.ה, ב.ב), (א.ה, ב.א))  
 ((א.ה, ב.ב), (א.ה, ב.ב))  
 ((א.ה, ב.ה), (א.א, ב.א))  
 ((א.ה, ב.ה), (א.א, ב.ב))  
 ((א.ה, ב.ה), (א.א, ב.ה))  
 ((א.ה, ב.ה), (א.ב, ב.א))  
 ((א.ה, ב.ה), (א.ב, ב.ב))  
 ((א.ה, ב.ה), (א.ב, ב.ה))  
 ((א.ה, ב.ה), (א.ה, ב.א))  
 ((א.ה, ב.ה), (א.ה, ב.ב))  
 ((א.ה, ב.ה), (א.ה, ב.ה))  
 ((א.ה, ב.ה), (א.א, ב.א))  
 ((א.ה, ב.ה), (א.א, ב.ב))  
 ((א.ה, ב.ה), (א.א, ב.ה))  
 ((א.ה, ב.ה), (א.ב, ב.א))  
 ((א.ה, ב.ה), (א.ב, ב.ב))  
 ((א.ה, ב.ה), (א.ב, ב.ה))



























$([1, 7], [7, 7]), [1, 1], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 1])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
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 $([1, 7], [7, 7]), [1, 7], [7, 1])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 1], [7, 1])$   
 $([1, 7], [7, 7]), [1, 1], [7, 7])$   
 $([1, 7], [7, 7]), [1, 1], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 1])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 1], [7, 1])$   
 $([1, 1], [7, 1]), ([1, 1], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 1], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 1])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7])$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7])$

[illegible]

$$([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\perp]), [\perp.\top], [\top.\top])$$
$$([\perp.\perp, \top.\top], ([\perp.\perp, \top.\perp]))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil, (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$([\perp.\perp], [\top.\top], ([\perp.\perp], [\top.\top]))$$
$$([\perp.\perp], [\top.\top], ([\perp.\top], [\top.\perp]))$$
$$([\perp.\perp, \top.\top], (\perp.\top, \top.\top))$$
$$([\perp.\perp, \top.\top], ([\perp.\top, \top.\perp]))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$([\perp.\perp, \top.\top], (\perp.\top, \top.\top))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil, (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\top])$$
$$([\perp.\perp, \top.\top], ([\perp.\top, \top.\perp]))$$
$$([\perp.\perp], [\top.\top], ([\perp.\top], [\top.\top]))$$
 $([\perp.\perp], [\top.\top], (\perp.\top, \top.\perp])$ 
$$([\perp.\perp], [\top.\top], ([\perp.\top], [\top.\perp]))$$
$$([\perp.\perp], [\top.\top]), ([\perp.\top], [\top.\top])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp, \top.\top], [\perp.\perp, \top.\perp]))$$
$$([\perp.\perp, \top.\top], [\perp.\perp, \top.\top])$$
$$([\perp.\perp, \top.\top], [\perp.\perp, \top.\top]))$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp \cdot \perp, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$



[illegible]

$([\perp, \Gamma, \Gamma.\perp], (\perp.\perp, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\perp, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\neg, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\neg, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\neg, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\perp, \Gamma.\perp])$   
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 $([\perp, \Gamma, \Gamma.\perp], (\perp.\perp, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], (\perp.\Gamma, \Gamma.\Gamma])$   
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 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\Gamma])$   
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 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\Gamma])$

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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] ) )  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ], [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ], [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] ) )



$$([\perp, \top, \top, \top], [\perp, \perp, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$$
$$([\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$$
$$([\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$$
$$([\perp.\top, \top.\perp], (\perp.\top, \top.\perp))$$
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$$([\perp.\top, \top.\perp], (\perp.\top, \top.\top))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$([\perp, \top], [\perp, \top]), ([\perp, \top], [\perp, \top])$$
$$([\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$$
$$([\perp . \neg, \neg . \perp], [\perp . \neg, \neg . \neg])$$
 $([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$  $([\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$ 
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
 $([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$



([ $\perp$ ],  $\top$ ,  $\top$ ], [ $\perp$ ],  $\top$ ,  $\top$ ))  
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[illegible]

$([1.7, 7.7], [1.7, 7.7])$

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$([1.7, 7.7], [1.7, 7.7])$

$([1.7, 7.7], [1.7, 7.7])$

$([1.7, 7.7], [1.7, 7.7])$

$([1.7, 7.7], [1.7, 7.7])$

$([1.7, 7.7], [1.7, 7.7])$

$([1.7, 7.7], [1.7, 7.7])$

$([1.7, 7.7], [1.7, 7.7])$

$([1.7, 7.7], [1.7, 7.7])$

$([1.7, 7.7], [1.7, 7.7])$

$76. ([1.7, 7.7], [1.7, 7.7])$

$([1.7, 7.7], [1.7, 7.7])$

$([1.7, 7.7], [1.7, 7.7])$

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$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
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$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp])$   
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 $((\perp.\top, \top.\top), (\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top])$   
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 $((\perp.\top, \top.\top), (\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top])$   
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 $((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$



[illegible]

$((\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
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((א.ה, ב.ב],[א.ב, ב.ה])  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
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[illegible]



$([\perp, \Gamma, \Gamma.\perp], [\perp, \Gamma, \Gamma.\perp])$   
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$([a, b], [a, c])$

$([a, b], [a, a])$

$([a, b], [c, c])$

$([a, b], [c, a])$

$([a, b], [c, b])$

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$([a, b], [c, a])$

$([a, b], [c, b])$

$([a, b], [a, c])$

$([a, b], [a, a])$

$([a, b], [a, b])$

$\Gamma_{77}. ([a, c], [a, c])$

$([c, c], [c, c])$

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$([c, c], [c, b])$

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$([c, c], [c, c])$

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$([c, c], [c, b])$

$([c, c], [c, c])$

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$((\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\perp])$   
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 $((\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\Gamma])$   
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((⌊.⌈, ⌈.⌈), (⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌈), (⌊.⌈, ⌈.⌈))  
((⌊.⌈, ⌈.⌈), (⌊.⌈, ⌈.⌋))  
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((⌊.⌈, ⌈.⌈), (⌊.⌈, ⌈.⌈))  
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 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$   
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 $((\perp.\top, \top.\top), [\perp.\perp, \top.\perp])$   
 $((\perp.\top, \top.\top), [\perp.\perp, \top.\top])$   
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 $((\perp.\top, \top.\top), [\perp.\top, \top.\top])$   
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 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$   
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 $((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp])$

$((\perp . \perp , \top . \perp ], (\perp . \top , \top . \top ))$   
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$((\perp . \Gamma, \Gamma.\perp], (\perp . \Gamma, \Gamma.\top))$   
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((⌊.Γ, Γ.Γ], [⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.⌊))  
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((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.Γ))  
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((⌊.Γ, Γ.⌊], (⌊.⌊, Γ.Γ])  
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((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ])  
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((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], (⌊.Γ, Γ.Γ])  
((⌊.Γ, Γ.⌊], [⌊.⌊, Γ.⌊))  
((⌊.Γ, Γ.⌊], [⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.⌊], [⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.⌊], [⌊.Γ, Γ.⌊))

$((\perp.\top, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\perp])$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\perp])$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$   
 $((\perp.\top, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\top, \top.\top], (\perp.\perp, \top.\perp))$   
 $((\perp.\top, \top.\top], (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top], (\perp.\perp, \top.\top))$   
 $((\perp.\top, \top.\top], (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top], (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top], (\perp.\top, \top.\top))$   
 $((\perp.\top, \top.\top], (\perp.\top, \top.\perp))$   
 $((\perp.\top, \top.\top], (\perp.\perp, \top.\perp])$   
 $((\perp.\top, \top.\top], (\perp.\perp, \top.\top])$



[illegible]

(( $\perp$ ,  $\top$ ), ( $\perp$ ,  $\top$ ))  
 (( $\perp$ ,  $\top$ ), ( $\perp$ ,  $\perp$ ))  
 (( $\perp$ ,  $\top$ ), ( $\top$ ,  $\perp$ ))  
 (( $\perp$ ,  $\top$ ), ( $\top$ ,  $\top$ ))  
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 (( $\perp$ ,  $\perp$ ), ( $\top$ ,  $\top$ ))  
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 (( $\top$ ,  $\perp$ ), ( $\top$ ,  $\perp$ ))  
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 (( $\top$ ,  $\top$ ), ( $\top$ ,  $\perp$ ))  
 (( $\top$ ,  $\top$ ), ( $\top$ ,  $\top$ ))





([ $\perp$ ],  $\perp$  ,  $\top$  .  $\top$ ), [ $\perp$  .  $\perp$  ,  $\top$  .  $\top$  ] )  
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([ $\perp$  .  $\perp$  ,  $\top$  .  $\top$ ), ( $\perp$  .  $\top$  ,  $\top$  .  $\top$  ] )

$([\perp, \perp], \top, \top), [\perp, \perp], \top, \perp))$   
 $([\perp, \perp], \top, \top), [\perp, \perp], \top, \top))$   
 $([\perp, \perp], \top, \top), [\perp, \perp], \top, \top))$   
 $([\perp, \perp], \top, \top), [\perp, \top, \top, \perp])$   
 $([\perp, \perp], \top, \top), [\perp, \top, \top, \top))$   
 $([\perp, \perp], \top, \top), [\perp, \top, \top, \top))$   
 $([\perp, \perp], \top, \top), [\perp, \top, \top, \perp])$   
 $([\perp, \perp], \top, \top), [\perp, \top, \top, \top))$   
 $([\perp, \perp], \top, \top), [\perp, \top, \top, \top))$   
 $([\perp, \perp], \top, \top), [\perp, \perp], \top, \perp])$   
 $([\perp, \perp], \top, \top), [\perp, \perp], \top, \top])$   
 $([\perp, \perp], \top, \top), [\perp, \perp], \top, \top])$   
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 $([\perp, \perp], \top, \top), [\perp, \top, \top, \perp])$   
 $([\perp, \perp], \top, \top), [\perp, \top, \top, \top])$   
 $([\perp, \perp], \top, \top), [\perp, \top, \top, \top])$   
 $([\perp, \top, \top, \perp], (\perp, \perp], \top, \top))$   
 $([\perp, \top, \top, \perp], (\perp, \perp], \top, \top))$   
 $([\perp, \top, \top, \perp], (\perp, \top, \top, \perp))$   
 $([\perp, \top, \top, \perp], (\perp, \top, \top, \top))$   
 $([\perp, \top, \top, \perp], (\perp, \top, \top, \top))$   
 $([\perp, \top, \top, \perp], (\perp, \top, \top, \perp))$   
 $([\perp, \top, \top, \perp], (\perp, \top, \top, \top))$



([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) , [ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\perp$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\Gamma$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , ([ $\perp$  .  $\neg$  ,  $\Gamma$  .  $\neg$  ] )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\Gamma$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , [ $\perp$  .  $\perp$  ,  $\Gamma$  .  $\neg$  ) )  
([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ) , [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ) )













$([1, 7], [7, 7]), [1, 1], [7, 7])$   
 $([1, 7], [7, 7]), [1, 1], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 1])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 1])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
 $([1, 7], [7, 7]), [1, 7], [7, 7])$   
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 $([1, 1], [7, 1]), ([1, 1], [7, 7]))$   
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 $([1, 1], [7, 1]), ([1, 7], [7, 1]))$   
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 $([1, 1], [7, 1]), ([1, 7], [7, 7]))$   
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 $([1, 1], [7, 1]), ([1, 7], [7, 1]))$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7]))$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7]))$   
 $([1, 1], [7, 1]), ([1, 7], [7, 1]))$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7]))$   
 $([1, 1], [7, 1]), ([1, 7], [7, 1]))$   
 $([1, 1], [7, 1]), ([1, 7], [7, 7]))$









[illegible]

([⊥ . Γ , Γ . ⊥ ] , [⊥ . γ , Γ . Γ ])  
([⊥ . Γ , Γ . ⊥ ] , [⊥ . γ , Γ . γ ])  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊥ , Γ . ⊥ ))  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊥ , Γ . Γ ))  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊥ , Γ . γ ))  
([⊥ . Γ , Γ . Γ ] , (⊥ . Γ , Γ . ⊥ ))  
([⊥ . Γ , Γ . Γ ] , (⊥ . Γ , Γ . Γ ))  
([⊥ . Γ , Γ . Γ ] , (⊥ . Γ , Γ . γ ))  
([⊥ . Γ , Γ . Γ ] , (⊥ . γ , Γ . ⊥ ))  
([⊥ . Γ , Γ . Γ ] , (⊥ . γ , Γ . Γ ))  
([⊥ . Γ , Γ . Γ ] , (⊥ . γ , Γ . γ ))  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊥ , Γ . ⊥ ])  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊥ , Γ . Γ ])  
([⊥ . Γ , Γ . Γ ] , (⊥ . ⊥ , Γ . γ ])  
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([⊥ . Γ , Γ . Γ ] , (⊥ . Γ , Γ . γ ])  
([⊥ . Γ , Γ . Γ ] , (⊥ . γ , Γ . ⊥ ])  
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([⊥ . Γ , Γ . Γ ] , [⊥ . ⊥ , Γ . ⊥ ))  
([⊥ . Γ , Γ . Γ ] , [⊥ . ⊥ , Γ . Γ ))  
([⊥ . Γ , Γ . Γ ] , [⊥ . ⊥ , Γ . γ ))  
([⊥ . Γ , Γ . Γ ] , [⊥ . Γ , Γ . ⊥ ))  
([⊥ . Γ , Γ . Γ ] , [⊥ . Γ , Γ . Γ ))

$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp.\top, \top.\top], [\perp.\bot, \top.\perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp.\top, \top.\top], [\perp.\bot, \top.\bot])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \perp, \top \cdot \perp])$$
$$([\perp, \top, \top, \top], [\perp, \perp, \top, \top])$$
$$([\perp, \top, \top, \top], [\perp, \perp, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \top], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp.\top, \top.\top], [\perp.\bot, \top.\perp])$$
$$([\perp, \top, \top, \top], [\perp, \top, \top, \top])$$
$$([\perp.\top, \top.\top], [\perp.\bot, \top.\bot])$$
$$([\perp.\top, \top.\top], ([\perp.\perp, \top.\perp]))$$
$$([\perp.\top, \top.\top], ([\perp.\perp, \top.\top]))$$
$$([\perp.\top, \top.\top], ([\perp.\perp, \top.\top]))$$
$$([\perp.\top, \top.\top], ([\perp.\top, \top.\perp]))$$
$$([\perp \cdot \top, \top \cdot \top], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp.\top, \top.\top], (\perp.\top, \top.\top))$$
$$([\perp.\top, \top.\top], (\perp.\top, \top.\perp))$$
$$([\sqcup.\sqcap, \sqcap.\sqcup], (\sqcup.\sqcap, \sqcap.\sqcup))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil), (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$([\perp.\top, \top.\top], ([\perp.\perp, \top.\perp]))$$
$$([\perp, \top, \top, \top], ([\perp, \perp], [\top, \top]))$$
$$([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$$

[illegible]









$([1.7], [1.7], [1.1], [1.7])$

$([1.7], [1.7], [1.7], [1.1])$

$([1.7], [1.7], [1.7], [1.7])$

$([1.7], [1.7], [1.7], [1.7])$

$([1.7], [1.7], [1.7], [1.1])$

$([1.7], [1.7], [1.7], [1.7])$

$([1.7], [1.7], [1.7], [1.7])$

$[1.7]^{78} . ([1.7], [1.7], [1.7], [1.7])$

$(([1.1], [1.1]), ([1.1], [1.1]))$

$(([1.1], [1.1]), ([1.1], [1.7]))$

$(([1.1], [1.1]), ([1.1], [1.7]))$

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$(([1.1], [1.1]), ([1.7], [1.7]))$

$(([1.1], [1.1]), ([1.7], [1.7]))$

$(([1.1], [1.1]), ([1.7], [1.1]))$

$(([1.1], [1.1]), ([1.7], [1.7]))$

$(([1.1], [1.1]), ([1.7], [1.7]))$

$(([1.1], [1.1]), ([1.1], [1.1]))$

$(([1.1], [1.1]), ([1.1], [1.7]))$

$(([1.1], [1.1]), ([1.1], [1.7]))$

$(([1.1], [1.1]), ([1.7], [1.1]))$

$(([1.1], [1.1]), ([1.7], [1.7]))$

$(([1.1], [1.1]), ([1.7], [1.7]))$

$(([1.1], [1.1]), ([1.7], [1.1]))$

$(([1.1], [1.1]), ([1.7], [1.7]))$

$((\perp . \perp , \top . \perp ), (\perp . \top , \top . \top ))$   
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 $((\perp . \perp , \top . \perp ), [\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \perp ), [\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \top ))$   
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$$\begin{aligned} & ((\perp \cdot \Gamma, \Gamma.\Delta], (\Delta.\Delta, \Gamma.\Delta)) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], (\Delta.\Delta, \Gamma.\Gamma)) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], (\Delta.\Delta, \Gamma.\neg)) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], (\Delta.\Gamma, \Gamma.\Delta)) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], (\Delta.\Gamma, \Gamma.\Gamma)) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], (\Delta.\Gamma, \Gamma.\neg)) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], (\Delta.\neg, \Gamma.\Delta)) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], (\Delta.\neg, \Gamma.\Gamma)) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], (\Delta.\neg, \Gamma.\neg)) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Delta, \Gamma.\Delta]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Delta, \Gamma.\Gamma]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Delta, \Gamma.\neg]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Gamma, \Gamma.\Delta]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Gamma, \Gamma.\Gamma]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Gamma, \Gamma.\neg]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\neg, \Gamma.\Delta]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\neg, \Gamma.\Gamma]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\neg, \Gamma.\neg]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Delta, \Gamma.\Delta]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Delta, \Gamma.\Gamma]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Delta, \Gamma.\neg]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Gamma, \Gamma.\Delta]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Gamma, \Gamma.\Gamma]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\Gamma, \Gamma.\neg]) \\ & ((\perp \cdot \Gamma, \Gamma.\Delta], [\Delta.\neg, \Gamma.\Delta]) \end{aligned}$$





((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.⌊ ))  
((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.⌊ ))  
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((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], ⌊.⌊, Γ.⌊ ))  
((⌊.Γ, Γ.Γ], ⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.Γ], ⌊.⌊, Γ.Γ))  
((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.⌊ ))  
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((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], ⌊.⌊, Γ.⌊ ))  
((⌊.Γ, Γ.Γ], ⌊.⌊, Γ.Γ))  
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((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.⌊ ))  
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((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.⌊ ))  
((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.Γ], ⌊.Γ, Γ.Γ))  
((⌊.Γ, Γ.⌊], ⌊.⌊, Γ.⌊ ))

[illegible]

$((\perp.\top, \top.\perp), (\perp.\top, \top.\top))$   
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((\text{A} , \text{B} , \text{C} , \text{D} ))  
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((\text{A} , \text{B} , \text{C} , \text{F} ))  
((\text{A} , \text{B} , \text{C} , \text{D} , \text{E} ))  
((\text{A} , \text{B} , \text{C} , \text{D} , \text{F} ))  
((\text{A} , \text{B} , \text{C} , \text{D} , \text{G} ))  
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$((\perp.\top, \top.\top), (\perp.\perp, \top.\top))$   
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$(\perp . \Gamma, \Gamma.\perp), (\perp . \Gamma, \Gamma.\perp)$   
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 $(\perp . \Gamma, \Gamma.\perp), [\perp . \perp, \Gamma.\Gamma)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \perp, \Gamma.\neg)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\perp)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\Gamma)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\neg)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\perp)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\Gamma)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\neg)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\perp)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\Gamma)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \Gamma, \Gamma.\neg)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\perp)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\Gamma)$   
 $(\perp . \Gamma, \Gamma.\perp), [\perp . \neg, \Gamma.\neg)$   
 $(\perp . \Gamma, \Gamma.\Gamma), (\perp . \perp, \Gamma.\perp)$













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$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$   
 $([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$   
 $([\perp.\top, \top.\top], [\perp.\top, \top.\top])$   
 $([\perp.\top, \top.\top], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
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 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$   
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 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $([\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$

$([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\perp}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\perp}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\perp}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\neg}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\neg}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\neg}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\perp}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\perp}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\perp}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\top}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\top}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\top}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\neg}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\perp}, [\perp]_{\neg}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\perp}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\perp}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\perp}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\top}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\top}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\top}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\neg}, \Gamma_{\perp}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\neg}, \Gamma_{\top}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\neg}, \Gamma_{\neg}))$   
 $([\perp]_{\perp}, \Gamma_{\top}, (\perp_{\perp}, \Gamma_{\perp}))$

$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil)$$
$$([\perp.\perp], [\top.\top]), ([\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top], ([\perp.\top], [\top.\perp]))$$
$$([\perp.\perp], [\top.\top], ([\perp.\top], [\top.\top]))$$
$$([\perp.\perp], [\top.\top], ([\perp.\top], [\top.\perp]))$$
$$([\perp.\perp], [\top.\top], ([\perp.\top], [\top.\perp]))$$
$$([\perp.\perp], [\top.\top]), ([\perp.\top], [\top.\top])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp, \top.\top], [\perp.\perp, \top.\perp])$$
$$([\perp.\perp], [\top.\top], [\perp.\perp], [\top.\top])$$
$$([\perp.\perp, \top.\top], [\perp.\perp, \top.\top]))$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top, \top.\top]))$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\perp]))$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top], [\top.\perp]))$$
$$([\perp.\perp], [\top.\top], [\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\perp], [\top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top, \top.\perp])$$
$$([\perp.\perp], [\top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top], [\perp.\top], [\top.\perp])$$
$$([\bot . \bot, \top . \top], [\bot . \top, \top . \top])$$

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$$([\perp.\perp], [\top.\top], [\perp.\top], [\top.\perp]))$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top]), [\perp.\perp], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), [\perp.\perp], [\top.\top])$$
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$$([\perp.\perp], [\top.\top]), [\perp.\top], [\top.\perp])$$
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$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \perp, \top \cdot \top))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \perp))$$
$$([\perp \cdot \Gamma, \Gamma \cdot \perp], (\perp \cdot \Gamma, \Gamma \cdot \Gamma))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp, \top, \top, \perp], ([\perp, \top, \top, \perp]))$$
$$([\perp, \top, \top, \perp], ([\perp, \top, \top, \perp]))$$
$$([\perp.\top, \top.\perp], (\perp.\top, \top.\top))$$
$$([\perp, \top, \top, \perp], ([\perp, \perp], [\top, \perp]))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \perp, \top \cdot \top))$$
$$([\perp, \top, \top, \perp], ([\perp, \perp], [\top, \top]))$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \perp])$$

[illegible]



$([\perp, \top, \top, \top], [\perp, \perp, \top, \perp])$   
 $([\perp, \top, \top, \top], [\perp, \perp, \top, \top])$   
 $([\perp, \top, \top, \top], [\perp, \perp, \top, \perp])$   
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 $([\perp, \top, \top, \perp], (\perp, \perp, \top, \perp])$   
 $([\perp, \top, \top, \perp], (\perp, \perp, \top, \top])$   
 $([\perp, \top, \top, \perp], (\perp, \perp, \top, \perp])$   
 $([\perp, \top, \top, \perp], (\perp, \top, \top, \perp])$   
 $([\perp, \top, \top, \perp], (\perp, \top, \top, \top])$   
 $([\perp, \top, \top, \perp], (\perp, \top, \top, \perp])$   
 $([\perp, \top, \top, \perp], (\perp, \perp, \top, \perp])$



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([1.7, 1.1], [1.1, 1.1])  
([1.7, 1.1], [1.1, 1.7])  
([1.7, 1.1], [1.1, 1.7])

$$([\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$$
$$([\bot.\top, \top.\bot], [\bot.\top, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\perp])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\top], ([\perp.\perp, \top.\perp]))$$
 $([\perp, \top], [\perp, \top])$ 
$$(\llbracket \cdot \rrbracket, \vdash, \vdash), (\llbracket \cdot \rrbracket, \vdash, \vdash))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rfloor, \lfloor \cdot \rceil))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil, (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$(\lceil \cdot \rceil, \lceil \cdot \rceil, (\lceil \cdot \rceil, \lceil \cdot \rceil))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor, (\lceil \cdot \rceil, \lfloor \cdot \rfloor))$$
 $([\perp, \top], [\perp, \top])$  $([\perp, \top], [\perp, \top])$  $([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$ 
$$([\perp.\top, \top.\top], ([\perp.\top, \top.\perp]))$$
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rfloor, \lfloor \cdot \rceil)$$
 $([\perp.\top, \top.\top], [\perp.\top, \top.\top])$  $([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$  $([\perp, \top], [\perp, \top])$ 
$$(\lceil \cdot \rceil, \lfloor \cdot \rfloor), (\lceil \cdot \rceil, \lceil \cdot \rceil)$$
$$([\perp, \top], [\perp, \top], [\perp, \perp], [\top, \perp]))$$





$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$

$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$

$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$

$\top.\top^{79}.([\perp.\top, \top.\top], [\perp.\top, \top.\top])$

$((\perp.\perp, \top.\perp), (\perp.\perp, \top.\perp))$

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$((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$

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$((\perp.\perp, \top.\perp), (\perp.\perp, \top.\perp))$

$((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\perp), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\perp), [\perp.\perp, \top.\perp])$

$((\perp.\perp, \top.\perp), [\perp.\perp, \top.\top])$

$((\perp.\perp, \top.\perp), [\perp.\perp, \top.\top])$

$((\perp . \perp , \top . \perp ), [\perp . \top , \top . \perp ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \top ])$   
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 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \perp ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \top ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \top ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \perp , \top . \perp ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \perp , \top . \top ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \perp , \top . \top ])$   
 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \perp ])$   
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 $((\perp . \perp , \top . \perp ), [\perp . \top , \top . \top ])$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \perp , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \perp ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$   
 $((\perp . \perp , \top . \top ), (\perp . \top , \top . \top ))$







$((\perp . \Gamma, \Gamma.\perp), (\perp . \Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp), (\perp . \Gamma, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp), (\perp.\neg, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\perp), (\perp.\neg, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\perp), (\perp.\neg, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\Gamma))$



$((\perp . \Gamma, \Gamma . \Gamma), [\perp . \perp, \Gamma . \perp])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \perp, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \perp, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \perp])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \perp])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \perp, \Gamma . \perp))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \perp, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \perp, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \Gamma . \perp))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \perp))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \perp, \Gamma . \perp])$   
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 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \perp])$









$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

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$((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$

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$((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top))$

$((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$

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$((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\perp], (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\perp], (\perp.\perp, \top.\perp])$

$((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top])$

$((\perp.\perp, \top.\perp], (\perp.\perp, \top.\top])$

$((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp])$

$((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$

$((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$

$((\perp.\perp, \top.\perp], (\perp.\top, \top.\perp])$

$((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$

$((\perp.\perp, \top.\perp], (\perp.\top, \top.\top])$

$((\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$

$((\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$

$((\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$

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$((\perp, \Gamma, \Gamma.\perp], (\perp, \Gamma, \Gamma.\Gamma))$   
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((⌊.Γ,Γ.Π,⌊.⌋,Γ.⌋))  
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((⌊.Γ,Γ.Π,⌊.⌋,Γ.⌈))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌋))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.Γ))  
((⌊.Γ,Γ.Π,⌊.Γ,Γ.⌈))  
((⌊.Γ,Γ.Π,⌊.⌈,Γ.⌋))  
((⌊.Γ,Γ.Π,⌊.⌈,Γ.Γ))  
((⌊.Γ,Γ.Π,⌊.⌈,Γ.⌈))  
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((⌊.Γ,Γ.⌈,⌊.Γ,Γ.Γ))  
((⌊.Γ,Γ.⌈,⌊.Γ,Γ.⌈))  
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((⌊.Γ,Γ.⌈,⌊.Γ,Γ.⌈))  
((⌊.Γ,Γ.⌈,⌊.⌈,Γ.⌋))



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 $((\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$







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 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$   
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 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\perp))$   
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 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\perp), (\perp.\top, \top.\perp))$

$([\perp] . \bot , \top . \bot ), [\perp] . \top , \top . \top ))$   
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 $([\perp] . \bot , \top . \bot ), [\perp] . \top , \top . \bot ))$   
 $([\perp] . \bot , \top . \bot ), [\perp] . \top , \top . \top ))$   
 $([\perp] . \bot , \top . \bot ), [\perp] . \top , \top . \top ))$   
 $([\perp] . \bot , \top . \bot ), [\perp] . \bot , \top . \bot ])$   
 $([\perp] . \bot , \top . \bot ), [\perp] . \bot , \top . \top ])$   
 $([\perp] . \bot , \top . \bot ), [\perp] . \bot , \top . \top ])$   
 $([\perp] . \bot , \top . \bot ), [\perp] . \top , \top . \bot ])$   
 $([\perp] . \bot , \top . \bot ), [\perp] . \top , \top . \top ])$   
 $([\perp] . \bot , \top . \bot ), [\perp] . \top , \top . \bot ])$   
 $([\perp] . \bot , \top . \bot ), [\perp] . \top , \top . \top ])$   
 $([\perp] . \bot , \top . \top ), (\bot . \bot , \top . \top ))$   
 $([\perp] . \bot , \top . \top ), (\bot . \bot , \top . \top ))$   
 $([\perp] . \bot , \top . \top ), (\bot . \top , \top . \bot ))$   
 $([\perp] . \bot , \top . \top ), (\bot . \top , \top . \top ))$   
 $([\perp] . \bot , \top . \top ), (\bot . \top , \top . \top ))$   
 $([\perp] . \bot , \top . \top ), (\bot . \top , \top . \bot ))$   
 $([\perp] . \bot , \top . \top ), (\bot . \top , \top . \top ))$   
 $([\perp] . \bot , \top . \top ), (\bot . \top , \top . \top ))$   
 $([\perp] . \bot , \top . \top ), (\bot . \bot , \top . \bot ])$   
 $([\perp] . \bot , \top . \top ), (\bot . \bot , \top . \top ])$   
 $([\perp] . \bot , \top . \top ), (\bot . \bot , \top . \top ])$



$([1]_-, [1]_-, [1]_+), ([1]_-, [1]_-, [1]_+))$   
 $([1]_-, [1]_-, [1]_+), ([1]_-, [1]_-, [1]_+))$   
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 $([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_+))$   
 $([1]_-, [1]_-, [1]_+), ([1]_-, [1]_+, [1]_+))$   
 $([1]_-, [1]_-, [1]_+), ([1]_+, [1]_-, [1]_-))$   
 $([1]_-, [1]_-, [1]_+), ([1]_+, [1]_-, [1]_+))$   
 $([1]_-, [1]_-, [1]_+), ([1]_+, [1]_+, [1]_-))$   
 $([1]_-, [1]_-, [1]_+), ([1]_+, [1]_+, [1]_+))$   
 $([1]_-, [1]_-, [1]_+), ([1]_-, [1]_-, [1]_-))$   
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\Gamma$  ), [ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\perp$  ] )  
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([ $\perp$  .  $\Gamma$  ,  $\Gamma$  .  $\neg$  ), ( $\perp$  .  $\perp$  ,  $\Gamma$  .  $\perp$  ) )



[illegible]







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 $([\perp, \perp], \Gamma, \perp), (\perp, \perp, \Gamma, \neg))$   
 $([\perp, \perp], \Gamma, \perp), (\perp, \neg, \Gamma, \perp))$   
 $([\perp, \perp], \Gamma, \perp), (\perp, \neg, \Gamma, \Gamma))$   
 $([\perp, \perp], \Gamma, \perp), (\perp, \neg, \Gamma, \neg))$   
 $([\perp, \perp], \Gamma, \perp), (\perp, \neg, \neg, \perp))$   
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 $([\perp, \perp], \Gamma, \perp), ([\perp, \neg, \Gamma, \Gamma))$   
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[illegible]

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[illegible]







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([ $\perp$ ],  $\top$ ], [ $\perp$ ], [ $\top$ ]))  
([ $\perp$ ],  $\top$ ], [ $\perp$ ], [ $\top$ ]))  
([ $\perp$ ],  $\top$ ], [ $\perp$ ], [ $\perp$ ]))  
([ $\perp$ ],  $\top$ ], [ $\perp$ ], [ $\perp$ ]))

[illegible]



$([a, b], [c, d])$

$([a, b], [c, e])$

$([a, b], [c, f])$

$([a, b], [d, e])$

$([a, b], [d, f])$

$([a, b], [e, f])$

$([a, b], [c, d, e])$

$([a, b], [c, d, f])$

$([a, b], [c, e, f])$

$([a, b], [d, e, f])$

$([a, b], [c, d, e, f])$

$([a, b], [c, d, f, e])$

$([a, b], [c, e, d, f])$

$([a, b], [c, f, d, e])$

$([a, b], [d, e, c, f])$

$([a, b], [d, f, c, e])$

$([a, b], [d, e, f, c])$

$([a, b], [d, f, e, c])$

$([a, b], [e, c, d, f])$

$([a, b], [e, f, d, c])$

$([a, b], [f, c, d, e])$

$([a, b], [f, d, e, c])$

$([a, b], [c, d, e, f, a])$

$([a, b], [c, d, e, f, b])$

$[c, 80. ([a, b], [c, d], [e, f, a])]$



$((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$

$((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$

$((\perp.\perp, \top.\perp), [\perp.\perp, \top.\perp])$

$((\perp.\perp, \top.\perp), [\perp.\perp, \top.\top])$

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$((\perp.\perp, \top.\perp), [\perp.\top, \top.\top])$

$((\perp.\perp, \top.\top), (\perp.\perp, \top.\perp))$

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$((\perp.\perp, \top.\top), (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\perp))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\perp, \top.\top), (\perp.\perp, \top.\perp])$

$((\perp.\perp, \top.\top), (\perp.\perp, \top.\top])$

$((\perp.\perp, \top.\top), (\perp.\perp, \top.\top])$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\perp])$

$((\perp.\perp, \top.\top), (\perp.\top, \top.\top])$







$((\perp . \Gamma, \Gamma.\perp), (\perp.\neg, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\perp, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\Gamma, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\perp])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\Gamma])$   
 $((\perp . \Gamma, \Gamma.\perp), [\perp.\neg, \Gamma.\neg])$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\perp, \Gamma.\neg))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\Gamma, \Gamma.\perp))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\Gamma, \Gamma.\Gamma))$   
 $((\perp . \Gamma, \Gamma.\Gamma), (\perp.\Gamma, \Gamma.\neg))$



$((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \Gamma, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \Gamma), [\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \Gamma))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \neg))$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \Gamma, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \Gamma])$   
 $((\perp . \Gamma, \Gamma . \neg), (\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \neg), [\perp . \neg, \Gamma . \neg])$   
 $((\perp . \Gamma, \Gamma . \neg), [\perp . \neg, \Gamma . \Gamma])$







$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\perp])$

$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

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$((\perp.\top, \top.\top), [\perp.\top, \top.\top])$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp))$

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$((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$

$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

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$((\perp.\top, \top.\top), (\perp.\top, \top.\perp))$

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$((\perp.\top, \top.\top), (\perp.\top, \top.\top))$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\perp])$

$((\perp.\top, \top.\top), (\perp.\perp, \top.\top])$





$((\perp.\perp, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\perp])$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\perp], [\perp.\top, \top.\top])$   
 $((\perp.\perp, \top.\top], (\perp.\perp, \top.\perp))$   
 $((\perp.\perp, \top.\top], (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\top], (\perp.\perp, \top.\top))$   
 $((\perp.\perp, \top.\top], (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\top], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\top], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\top], (\perp.\top, \top.\perp))$   
 $((\perp.\perp, \top.\top], (\perp.\top, \top.\top))$   
 $((\perp.\perp, \top.\top], (\perp.\perp, \top.\perp])$   
 $((\perp.\perp, \top.\top], (\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\top], (\perp.\perp, \top.\top])$   
 $((\perp.\perp, \top.\top], (\perp.\top, \top.\perp])$   
 $((\perp.\perp, \top.\top], (\perp.\top, \top.\top])$















((⌊.7, ⌈.⌋], ⌊.⌋, ⌈.⌋))  
((⌊.7, ⌈.⌋], ⌊.⌋, ⌈.⌈))  
((⌊.7, ⌈.⌋], ⌊.⌋, ⌈.7))  
((⌊.7, ⌈.⌋], ⌊.⌈, ⌈.⌋))  
((⌊.7, ⌈.⌋], ⌊.⌈, ⌈.⌈))  
((⌊.7, ⌈.⌋], ⌊.⌈, ⌈.7))  
((⌊.7, ⌈.⌋], ⌊.7, ⌈.⌋))  
((⌊.7, ⌈.⌋], ⌊.7, ⌈.⌈))  
((⌊.7, ⌈.⌋], ⌊.7, ⌈.7))  
((⌊.7, ⌈.⌋], ⌊.⌋, ⌈.⌋))  
((⌊.7, ⌈.⌋], ⌊.⌋, ⌈.⌈))  
((⌊.7, ⌈.⌋], ⌊.⌋, ⌈.7))  
((⌊.7, ⌈.⌋], ⌊.⌈, ⌈.⌋))  
((⌊.7, ⌈.⌋], ⌊.⌈, ⌈.⌈))  
((⌊.7, ⌈.⌋], ⌊.⌈, ⌈.7))  
((⌊.7, ⌈.⌋], ⌊.7, ⌈.⌋))  
((⌊.7, ⌈.⌋], ⌊.7, ⌈.⌈))  
((⌊.7, ⌈.⌋], ⌊.7, ⌈.7))  
((⌊.7, ⌈.⌋], ⌊.⌋, ⌈.⌋))  
((⌊.7, ⌈.⌋], ⌊.⌋, ⌈.⌈))  
((⌊.7, ⌈.⌋], ⌊.⌋, ⌈.7))  
((⌊.7, ⌈.⌋], ⌊.⌈, ⌈.⌋))  
((⌊.7, ⌈.⌋], ⌊.⌈, ⌈.⌈))  
((⌊.7, ⌈.⌋], ⌊.⌈, ⌈.7))  
((⌊.7, ⌈.⌋], ⌊.7, ⌈.⌋))  
((⌊.7, ⌈.⌋], ⌊.7, ⌈.⌈))  
((⌊.7, ⌈.⌋], ⌊.7, ⌈.7))







[illegible]

$([\perp]_-, \top_-), [\perp]_+, \top_+)$   
 $([\perp]_-, \top_-), [\perp]_-, \top_-)$   
 $([\perp]_-, \top_-), [\perp]_-, \top_+)$   
 $([\perp]_-, \top_-), [\perp]_-, \top_-)$   
 $([\perp]_-, \top_-), [\perp]_+, \top_-)$   
 $([\perp]_-, \top_-), [\perp]_+, \top_+)$   
 $([\perp]_-, \top_-), [\perp]_+, \top_-)$   
 $([\perp]_-, \top_-), [\perp]_+, \top_-)$   
 $([\perp]_-, \top_-), [\perp]_+, \top_+)$   
 $([\perp]_-, \top_+), (\perp_-, \top_+)$   
 $([\perp]_-, \top_+), (\perp_-, \top_-)$   
 $([\perp]_-, \top_+), (\perp_+, \top_-)$   
 $([\perp]_-, \top_+), (\perp_+, \top_+)$   
 $([\perp]_-, \top_+), (\perp_+, \top_-)$   
 $([\perp]_-, \top_+), (\perp_+, \top_+)$   
 $([\perp]_-, \top_+), (\perp_-, \top_-)$   
 $([\perp]_-, \top_+), (\perp_-, \top_+)$   
 $([\perp]_-, \top_+), (\perp_-, \top_-)$   
 $([\perp]_-, \top_+), (\perp_+, \top_-)$   
 $([\perp]_-, \top_+), (\perp_+, \top_+)$   
 $([\perp]_-, \top_+), (\perp_+, \top_-)$   
 $([\perp]_-, \top_+), (\perp_+, \top_+)$







$([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\top, \Gamma.\top])$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\perp, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\Gamma, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\Gamma, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\Gamma, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\top, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\top, \Gamma.\top))$   
 $([\perp, \Gamma, \Gamma.\top], (\perp.\top, \Gamma.\top))$























$$([\perp.\perp], [\top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\perp], [\top.\top]), [\perp.\top], [\top.\perp])$$
$$([\perp.\perp], [\top.\top], [\perp.\top], [\top.\perp])$$
$$([\perp.\perp], [\top.\top]), [\perp.\top], [\top.\top])$$
$$([\perp, \top, \top, \perp], (\perp, \perp, \top, \perp))$$
$$([\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$$
$$([\perp.\top, \top.\perp], (\perp.\perp, \top.\top))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \perp))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp.\top, \top.\perp], (\perp.\top, \top.\perp))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \top, \top \cdot \top))$$
$$([\perp.\top, \top.\perp], (\perp.\top, \top.\top))$$
$$([\perp, \top, \top, \perp], ([\perp, \perp], [\top, \perp]))$$
$$([\perp \cdot \top, \top \cdot \perp], (\perp \cdot \perp, \top \cdot \top))$$
$$([\bot, \top, \top, \bot], [\bot, \bot, \top, \top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \perp])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp \cdot \top, \top \cdot \perp], [\perp \cdot \top, \top \cdot \top])$$
$$([\perp, \top, \top.\perp], (\perp.\top, \top.\perp])$$
$$([\perp, \top, \top, \perp], [\perp, \top, \top, \perp])$$
$$([\perp.\top, \top.\perp], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$$
$$([\perp, \top, \top, \perp], [\perp, \perp, \top, \top])$$
$$([\perp.\top, \top.\perp], [\perp.\perp, \top.\top])$$

$([\perp, \Gamma, \Gamma.\perp], [\perp, \Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp, \Gamma, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp, \Gamma, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\perp, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\Gamma, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\perp])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\Gamma])$   
 $([\perp, \Gamma, \Gamma.\perp], [\perp.\neg, \Gamma.\neg])$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\Gamma, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\perp))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\Gamma))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\neg, \Gamma.\neg))$   
 $([\perp, \Gamma, \Gamma.\Gamma], (\perp.\perp, \Gamma.\perp))$



[illegible]



[illegible]



$$([\bot.\top, \top.\top], [\bot.\bot, \top.\bot])$$
$$([\perp, \top], [\perp, \top], [\perp, \top], [\perp, \top])$$
 $([\perp, \top], [\perp, \bot], [\perp, \top])$ 
$$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp, \top], [\perp, \top], [\perp, \top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$$
$$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$$
 $([\perp.\top, \top.\top], (\perp.\perp, \top.\perp))$ 
$$([\perp.\top, \top.\top], (\perp.\perp, \top.\top))$$
$$([\perp.\top, \top.\top], (\perp.\perp, \top.\top))$$
$$([\perp.\top, \top.\top], (\perp.\top, \top.\perp))$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor)$$
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rceil, \lceil \cdot \rfloor))$$
 $([\perp.\top, \top.\top], (\perp.\top, \top.\perp))$  $([\perp.\top, \top.\top], (\perp.\top, \top.\top))$ 
$$(\lfloor \cdot \rfloor, \lceil \cdot \rceil), (\lfloor \cdot \rfloor, \lceil \cdot \rceil))$$
 $([\perp.\top, \top.\top], [\perp.\perp, \top.\perp])$ 
$$([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$$
 $([\perp.\top, \top.\top], [\perp.\perp, \top.\top])$  $([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$ 
$$([\perp.\top, \top.\top], [\perp.\top, \top.\top])$$
 $([\perp.\top, \top.\top], [\perp.\top, \top.\top])$  $([\perp.\top, \top.\top], [\perp.\top, \top.\perp])$

