

Regras de Dedução Natural:

$$\begin{array}{c}
 \frac{\varphi \quad \psi}{\varphi \wedge \psi} (\wedge_i) \\
 \\
 \frac{\varphi}{\varphi \vee \psi} (V_{i_1}) \quad \frac{\psi}{\varphi \vee \psi} (V_{i_2}) \\
 \\
 \frac{\boxed{\begin{array}{c} \varphi \\ \vdots \\ \psi \end{array}}}{\varphi \rightarrow \psi} (\rightarrow_i) \\
 \\
 \frac{\boxed{\begin{array}{c} \varphi \\ \vdots \\ \perp \end{array}}}{\neg \varphi} (\neg_i) \\
 \\
 \frac{}{\varphi \vee \neg \varphi} (LTE) \\
 \\
 \frac{\boxed{\begin{array}{c} \neg \varphi \\ \vdots \\ \perp \end{array}}}{\varphi} (RAA)
 \end{array}
 \qquad
 \begin{array}{c}
 \frac{\varphi \wedge \psi}{\varphi} (\wedge_{e_1}) \quad \frac{\varphi \wedge \psi}{\psi} (\wedge_{e_2}) \\
 \\
 \frac{\varphi \vee \psi \quad \boxed{\begin{array}{c} \varphi \\ \vdots \\ \chi \end{array}} \quad \boxed{\begin{array}{c} \psi \\ \vdots \\ \chi \end{array}}}{\chi} (V_e) \\
 \\
 \frac{\varphi \rightarrow \psi \quad \varphi}{\psi} (\rightarrow_e) \quad \frac{\varphi \rightarrow \psi \quad \neg \psi}{\neg \varphi} (MT) \\
 \\
 \frac{\neg \varphi \quad \varphi}{\perp} (\neg_e) \\
 \\
 \frac{\perp}{\varphi} (\perp_e) \\
 \\
 \frac{\neg \neg \varphi}{\varphi} (\neg \neg_e) \quad \frac{\varphi}{\neg \neg \varphi} (\neg \neg_i)
 \end{array}$$