1 Axioms

- $L_0 : \varphi \vee \neg\varphi$
- $L_1 : \varphi \to (\psi \to \varphi)$
- $L_2 : (\psi \to (\varphi_1 \to \varphi_2)) \to ((\psi \to \varphi_1) \to (\psi \to \varphi_2))$
- $L_3 : (\varphi \wedge \psi) \to \varphi$
- $L_4 : (\varphi \wedge \psi) \to \psi$
- $L_5 : \varphi \to (\psi \to (\psi \wedge \varphi))$
- $L_6 : \varphi \to (\varphi \vee \psi)$
- $L_7 : \psi \to (\varphi \vee \psi)$
- $L_8 : (\varphi_1 \to \varphi_3) \to ((\varphi_2 \to \varphi_3) \to ((\varphi_1 \vee \varphi_2) \to \varphi_3))$
- $L_9 : \neg\varphi \to (\varphi \to \psi)$
- $L_{10} : \forall\nu\varphi(\nu) \to \varphi(\tau)$
- $L_{11} : \varphi(\tau) \to \exists\nu\varphi(\nu)$
- L_{12}: If $\nu \notin free(\psi)$, then $\forall\nu(\psi \to \varphi(\nu)) \to (\psi \to \forall\nu\varphi(\nu))$
- L_{13}: If $\nu \notin free(\psi)$, then $\forall\nu(\varphi(\nu) \to \psi) \to (\exists\nu\varphi(\nu) \to \psi)$
- $L_{14} : \tau = \tau$
- $L_{15} : (\tau_1 = \tau_1' \wedge \ldots \wedge \tau_n = \tau_n') \to R(\tau_1, \ldots, \tau_n) \to R(\tau_1', \ldots, \tau_n')$
- $L_{16} : (\tau_1 = \tau_1' \wedge \ldots \wedge \tau_n = \tau_n') \to F(\tau_1, \ldots, \tau_n) = F(\tau_1', \ldots, \tau_n')$

2 Inference rules

$$\frac{\varphi \to \psi \quad \varphi}{\psi} \text{ Modus Ponens (MP)}$$

$$\frac{\varphi}{\forall\nu\varphi} \text{ Generalisation } (\forall) \text{ *}$$

* if ν does not occur free in any non-logical axiom.