

$$(\neg\neg\psi) \rightarrow (\neg\neg\psi) \vdash \neg\neg(\psi \rightarrow \psi) \quad \frac{[\psi]^v \quad [\neg\psi]^w}{(\neg e)}$$

$$\frac{\perp}{\psi} (\perp e)$$

$$\frac{[\neg(\psi \rightarrow \psi)]^u \quad \psi \rightarrow \psi}{(\rightarrow i)(\psi)} (\neg e)$$

$$\frac{\perp}{\neg\neg\psi} (\neg i)(\omega) \quad \frac{\neg\neg\psi}{(\rightarrow e)}$$

$$\neg\neg\psi$$

$$\frac{\perp}{\neg\psi} (\neg i)x \quad (\neg e)$$

$$\frac{\perp}{\neg\neg(\psi \rightarrow \psi)} (\neg i)u$$

$$\frac{[\psi]^y \quad [\psi]^x}{\psi \wedge \psi} (\wedge e)$$

$$\frac{[\neg(\psi \rightarrow \psi)]^u \quad \psi \rightarrow \psi}{(\rightarrow i)y} (\neg e)$$

$$\frac{\perp}{\neg\psi} (\neg i)x \quad (\neg e)$$