Deducción natural - Reglas básicas (LP + LPO)

$$\frac{}{\Gamma, \tau \vdash \tau}\ \mathsf{ax} \qquad \frac{\Gamma \vdash \bot}{\Gamma \vdash \tau}\ \bot_e$$

$$\frac{\Gamma \vdash \tau \quad \Gamma \vdash \sigma}{\Gamma \vdash \tau \wedge \sigma}\ \wedge_i \qquad \frac{\Gamma \vdash \tau \wedge \sigma}{\Gamma \vdash \tau}\ \wedge_{e_1} \qquad \frac{\Gamma \vdash \tau \wedge \sigma}{\Gamma \vdash \sigma}\ \wedge_{e_2}$$

$$\frac{\Gamma, \tau \vdash \sigma}{\Gamma \vdash \tau \Rightarrow \sigma}\ \Rightarrow_i \qquad \frac{\Gamma \vdash \tau \Rightarrow \sigma \quad \Gamma \vdash \tau}{\Gamma \vdash \sigma}\ \Rightarrow_e$$

$$\frac{\Gamma \vdash \tau}{\Gamma \vdash \tau \vee \sigma}\ \vee_{i_1} \qquad \frac{\Gamma \vdash \sigma}{\Gamma \vdash \tau \vee \sigma}\ \vee_{i_2} \qquad \frac{\Gamma \vdash \tau \vee \sigma \quad \Gamma, \tau \vdash \rho \quad \Gamma, \sigma \vdash \rho}{\Gamma \vdash \rho}\ \vee_e$$

$$\frac{\Gamma, \tau \vdash \bot}{\Gamma \vdash \neg\tau}\ \neg_i \qquad \frac{\Gamma \vdash \tau \quad \Gamma \vdash \neg\tau}{\Gamma \vdash \bot}\ \neg_e$$

$$\frac{\Gamma \vdash \sigma \quad X \notin \mathsf{fv}(\Gamma)}{\Gamma \vdash \forall X.\sigma}\ \forall_i \qquad \frac{\Gamma \vdash \forall X.\sigma}{\Gamma \vdash \sigma\{X := t\}}\ \forall_e$$

$$\frac{\Gamma \vdash \sigma\{X := t\}}{\Gamma \vdash \exists X.\sigma}\ \exists_i \qquad \frac{\Gamma \vdash \exists X.\sigma \quad \Gamma, \sigma \vdash \tau \quad X \notin \mathsf{fv}(\Gamma, \tau)}{\Gamma \vdash \tau}\ \exists_e$$