

# Deducción natural

## Reglas básicas

$$\begin{array}{c}
 \frac{\Gamma \vdash \tau \quad \Gamma \vdash \sigma}{\Gamma \vdash \tau \wedge \sigma} \wedge_i \qquad \frac{\Gamma, \tau \vdash \sigma}{\Gamma \vdash \tau \Rightarrow \sigma} \Rightarrow_i \qquad \frac{\Gamma \vdash \tau}{\Gamma \vdash \tau \vee \sigma} \vee_{i_1} \qquad \frac{\Gamma \vdash \sigma}{\Gamma \vdash \tau \vee \sigma} \vee_{i_2} \qquad \frac{\Gamma, \tau \vdash \perp}{\Gamma \vdash \neg \tau} \neg_i \\
 \\
 \frac{}{\Gamma, \tau \vdash \tau} \text{ax} \qquad \frac{\Gamma \vdash \tau \wedge \sigma}{\Gamma \vdash \tau} \wedge_{e_1} \qquad \frac{\Gamma \vdash \tau \wedge \sigma}{\Gamma \vdash \sigma} \wedge_{e_2} \qquad \frac{\Gamma \vdash \tau \Rightarrow \sigma \quad \Gamma \vdash \tau}{\Gamma \vdash \sigma} \Rightarrow_e \qquad \frac{\Gamma \vdash \tau \vee \sigma \quad \Gamma, \tau \vdash \rho \quad \Gamma, \sigma \vdash \rho}{\Gamma \vdash \rho} \vee_e \qquad \frac{\Gamma \vdash \tau \quad \Gamma \vdash \neg \tau}{\Gamma \vdash \perp} \neg_e \qquad \frac{\Gamma \vdash \perp}{\Gamma \vdash \tau} \perp_e
 \end{array}$$

Lógica intuicionista

Lógica clásica

$$\frac{\Gamma \vdash \neg \neg \tau}{\Gamma \vdash \tau} \neg \neg_e$$

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## Reglas derivadas

### Reglas intuicionistas

$$\frac{\Gamma \vdash \tau}{\Gamma \vdash \neg\neg\tau} \neg\neg_i \qquad \frac{\Gamma \vdash \tau \Rightarrow \sigma \quad \Gamma \vdash \neg\sigma}{\Gamma \vdash \neg\tau} \text{MT}$$

### Reglas clásicas

$$\frac{\Gamma, \neg\tau \vdash \perp}{\Gamma \vdash \tau} \text{PBC} \qquad \frac{}{\Gamma \vdash \tau \vee \neg\tau} \text{LEM}$$