

Introduction Rules

$$\frac{A \text{ true} \quad B \text{ true}}{A \wedge B \text{ true}} \wedge \text{I}$$

$$\frac{A \text{ true}}{A \vee B \text{ true}} \vee \text{I}_L \quad \frac{B \text{ true}}{A \vee B \text{ true}} \vee \text{I}_R$$

$$\frac{\frac{\frac{\text{---}^u}{A \text{ true}} \vdots}{B \text{ true}}}{A \supset B \text{ true}} \supset \text{I}^u$$

$$\frac{\frac{\frac{\text{---}^u}{A \text{ true}} \vdots}{p \text{ true}}}{\neg A \text{ true}} \neg \text{I}^{p,u}$$

$$\frac{\text{---} \top \text{I}}{\top \text{ true}}$$

no \perp introduction

$$\frac{[a/x]A \text{ true}}{\forall x. A \text{ true}} \forall \text{I}^a$$

$$\frac{[t/x]A \text{ true}}{\exists x. A \text{ true}} \exists \text{I}$$

Elimination Rules

$$\frac{A \wedge B \text{ true}}{A \text{ true}} \wedge \text{E}_L \quad \frac{A \wedge B \text{ true}}{B \text{ true}} \wedge \text{E}_R$$

$$\frac{\frac{\text{---}^u}{A \text{ true}} \quad \frac{\text{---}^w}{B \text{ true}} \quad \vdots \quad \vdots}{A \vee B \text{ true} \quad C \text{ true} \quad C \text{ true}} \vee \text{E}^{u,w}$$

$$\frac{A \supset B \text{ true} \quad A \text{ true}}{B \text{ true}} \supset \text{E}$$

$$\frac{\neg A \text{ true} \quad A \text{ true}}{C \text{ true}} \neg \text{E}$$

no \top elimination

$$\frac{\perp \text{ true}}{C \text{ true}} \perp \text{E}$$

$$\frac{\forall x. A \text{ true}}{[t/x]A \text{ true}} \forall \text{E}$$

$$\frac{\frac{\text{---}^u}{[a/x]A \text{ true}} \quad \vdots}{\exists x. A \text{ true} \quad C \text{ true}} \exists \text{E}^{a,u}$$