

## Règles de la déduction naturelle

$$\frac{}{\Gamma, F \vdash F} \text{ (ax)}$$

$$\frac{\Gamma \vdash F}{\Gamma, G \vdash F} \text{ (aff)}$$

$$\frac{\Gamma, F \vdash G}{\Gamma \vdash F \Rightarrow G} \text{ (}\Rightarrow_i\text{)}$$

$$\frac{\Gamma \vdash F \Rightarrow G \quad \Gamma \vdash F}{\Gamma \vdash G} \text{ (}\Rightarrow_e\text{)}$$

$$\frac{\Gamma \vdash F \quad \Gamma \vdash G}{\Gamma \vdash F \wedge G} \text{ (}\wedge_i\text{)}$$

$$\frac{\Gamma \vdash F \wedge G}{\Gamma \vdash F} \text{ (}\wedge_g\text{)} \quad \frac{\Gamma \vdash F \wedge G}{\Gamma \vdash G} \text{ (}\wedge_d\text{)}$$

$$\frac{\Gamma \vdash F}{\Gamma \vdash F \vee G} \text{ (}\vee_i^g\text{)} \quad \frac{\Gamma \vdash G}{\Gamma \vdash F \vee G} \text{ (}\vee_i^d\text{)}$$

$$\frac{\Gamma \vdash F \vee G \quad \Gamma, F \vdash H \quad \Gamma, G \vdash H}{\Gamma \vdash H} \text{ (}\vee_e\text{)}$$

$$\frac{\Gamma, F \vdash \perp}{\Gamma \vdash \neg F} \text{ (}\neg_i\text{)}$$

$$\frac{\Gamma \vdash \neg F \quad \Gamma \vdash F}{\Gamma \vdash \perp} \text{ (}\neg_e\text{)}$$

$$\frac{\Gamma, \neg F \vdash \perp}{\Gamma \vdash F} \text{ (}\perp_c\text{)}$$

$$\frac{\Gamma \vdash F \text{ où } x \text{ non libre dans } \Gamma}{\Gamma \vdash \forall x, F} \text{ (}\forall_i\text{)}$$

$$\frac{\Gamma \vdash \forall x, F}{\Gamma \vdash F[x \rightarrow t]} \text{ (}\forall_e\text{)}$$

$$\frac{\Gamma \vdash F[x \rightarrow t]}{\Gamma \vdash \exists x, F} \text{ (}\exists_i\text{)}$$

$$\frac{\Gamma \vdash \exists x, F \quad \Gamma \cup \{F\} \vdash G \quad x \text{ libre ni dans } \Gamma \text{ ni dans } G}{\Gamma \vdash G} \text{ (}\exists_e\text{)}$$