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1 Sylogismes

1.1 Modus Ponens

$$\frac{\frac{}{(p \rightarrow q), p \vdash (p \rightarrow q)} \text{ ax} \quad \frac{}{(p \rightarrow q), p \vdash p} \text{ ax}}{(p \rightarrow q), p \vdash q} \rightarrow_e$$

1.2 Modus Tollens

$$\frac{\frac{}{p, (p \rightarrow q), \neg q \vdash q} \text{ ax} \quad \frac{}{p, (p \rightarrow q), \neg q \vdash \neg q} \text{ ax}}{\frac{p, (p \rightarrow q), \neg q \vdash \perp}{(p \rightarrow q), \neg q \vdash \neg p} \neg_i} \neg_e$$

1.3 Syllogisme disjonctif

$$\frac{\frac{}{(p \vee q), \neg p \vdash (p \vee q)} \text{ ax} \quad \frac{\frac{}{\neg q, p, (p \vee q), \neg p \vdash \neg p} \text{ ax} \quad \frac{}{\neg q, p, (p \vee q), \neg p \vdash p} \text{ ax}}{\frac{\neg q, p, (p \vee q), \neg p \vdash \perp}{p, (p \vee q), \neg p \vdash q} \perp} \neg_e \quad \frac{}{q, (p \vee q), \neg p \vdash q} \text{ ax}}{(p \vee q), \neg p \vdash q} \vee_e$$

1.4 Syllogisme barbara

$$\frac{\frac{}{p, (p \rightarrow q), (q \rightarrow r) \vdash (q \rightarrow r)} \text{ ax} \quad \frac{\frac{}{p, (p \rightarrow q), (q \rightarrow r) \vdash q} \text{ ax}}{\frac{p, (p \rightarrow q), (q \rightarrow r) \vdash r}{(p \rightarrow q), (q \rightarrow r) \vdash (p \rightarrow r)} \rightarrow_i} \rightarrow_e$$

1.5 Syllogisme Festino

$$\frac{\frac{\text{Modus Ponens}}{p, (p \rightarrow \neg q), q \vdash \neg q} \text{ ax} \quad \frac{\text{Modus Ponens}}{p, (p \rightarrow \neg q), q \vdash q} \text{ ax}}{\frac{p, (p \rightarrow \neg q), q \vdash \perp}{(p \rightarrow \neg q), q \vdash \neg p} \neg_i} \neg_e$$

1.6 Syllogisme Cesare

$$\frac{\frac{\text{Modus Ponens}}{p, r, (p \rightarrow \neg q), (r \rightarrow q) \vdash \neg q} \text{ ax} \quad \frac{\text{Modus Ponens}}{p, r, (p \rightarrow \neg q), (r \rightarrow q) \vdash q} \text{ ax}}{\frac{\frac{p, r, (p \rightarrow \neg q), (r \rightarrow q) \vdash \perp}{r, (p \rightarrow \neg q), (r \rightarrow q) \vdash \neg p} \neg_i}{(p \rightarrow \neg q), (r \rightarrow q) \vdash (r \rightarrow \neg p)} \rightarrow_i} \neg_e$$