

$$\frac{}{\Gamma, A, \Delta \vdash A} (Ax)$$

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$$\frac{\Gamma, A, B, \Delta \vdash C}{\Gamma, B, A, \Delta \vdash C} (X)$$

$$\frac{\Gamma, A, A, \Delta \vdash C}{\Gamma, A, \Delta \vdash C} (C)$$

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$$\frac{\Gamma \vdash A \quad \Delta \vdash B}{\Gamma, \Delta \vdash A \wedge B} (\wedge\mathcal{I})$$

$$\frac{\Gamma \vdash A \wedge B}{\Gamma \vdash A} (\wedge\mathcal{E})$$

$$\frac{\Gamma \vdash A \wedge B}{\Gamma \vdash B} (\wedge\mathcal{E})$$

$$\frac{\Gamma \vdash A}{\Gamma \vdash A \vee B} (\vee\mathcal{I}) \quad \frac{\Gamma \vdash B}{\Gamma \vdash A \vee B} (\vee\mathcal{I})$$

$$\frac{\Gamma \vdash A \vee B \quad \Gamma, A \vdash C \quad \Gamma, B \vdash C}{\Gamma \vdash C} (\vee\mathcal{E})$$

$$\frac{\Gamma, A \vdash B}{\Gamma \vdash A \rightarrow B} (\rightarrow\mathcal{I})$$

$$\frac{\Gamma \vdash A \quad \Delta \vdash A \rightarrow B}{\Gamma, \Delta \vdash B} (\rightarrow\mathcal{E})$$

$$\frac{\Gamma \vdash \perp}{\Gamma \vdash A} (\perp\mathcal{E})$$

$$\frac{\Gamma \vdash \neg\neg A}{\Gamma \vdash A} (\neg\neg)$$

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$$\frac{\Gamma, A \vdash \perp}{\Gamma \vdash \neg A} (\neg\mathcal{I})$$

$$\frac{\Gamma \vdash A \quad \Delta \vdash \neg A}{\Gamma, \Delta \vdash \perp} (\neg\mathcal{E})$$

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$$\frac{\Gamma \vdash A}{\Gamma, B \vdash A} (W)$$

$$\frac{\Gamma \vdash A \quad \Delta, A \vdash B}{\Gamma, \Delta \vdash B} (Cut)$$

$$\frac{}{\Gamma \vdash A \vee \neg A} (TND)$$

$$\frac{\Gamma, \neg A \vdash \perp}{\Gamma \vdash A} (RAA)$$