

α (alpha) Rules

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$$\frac{P \wedge Q}{P} \quad \frac{P \wedge Q}{Q} \quad \frac{\neg(P \vee Q)}{\neg P} \quad \frac{\neg(P \vee Q)}{\neg Q}$$

$$\frac{\neg(P \rightarrow Q)}{P} \quad \frac{\neg(P \rightarrow Q)}{\neg Q} \quad \frac{\neg\neg P}{P}$$

β (beta) Rules

β -Rules

$$\begin{array}{cccc} \frac{P \vee Q}{\neg P} & \frac{\neg(P \wedge Q)}{P} & \frac{P \rightarrow Q}{P} & \frac{P \rightarrow Q}{\neg Q} \\ \hline Q & \neg Q & Q & \neg P \end{array}$$

Branching Rule

$$\frac{}{P \mid \neg P}$$