

Modus Ponens

$$\begin{array}{c} P \rightarrow Q \\ P \\ \hline Q \end{array}$$

Hypothetical Syllogism

$$\begin{array}{c} P \rightarrow Q \\ Q \rightarrow R \\ \hline P \rightarrow R \end{array}$$

Conjunction

$$\begin{array}{c} P \\ Q \\ \hline P \wedge Q \end{array}$$

Modus Tollens

$$\begin{array}{c} P \rightarrow Q \\ \neg Q \\ \hline \neg P \end{array}$$

Disjunctive Syllogism

$$\begin{array}{c} P \vee Q \\ \neg P \\ \hline Q \end{array}$$

Constructive Dilemma

$$\begin{array}{c} (P \rightarrow Q) \wedge (R \rightarrow S) \\ P \vee R \\ \hline Q \vee S \end{array}$$

Simplification

$$\begin{array}{c} P \wedge Q \\ \hline P \end{array}$$

Absorption

$$\begin{array}{c} P \rightarrow Q \\ \hline P \rightarrow (P \vee Q) \end{array}$$

Addition

$$\begin{array}{c} P \\ \hline P \vee Q \end{array}$$