

Conditional introduction:

$$\left| \begin{array}{l} \left| \begin{array}{l} A \\ \vdots \\ B \end{array} \right. \\ (A \rightarrow B) \end{array} \right.$$

Conditional elimination:

$$\left| \begin{array}{l} A \\ \vdots \\ (A \rightarrow B) \\ \vdots \\ B \end{array} \right. \left| \begin{array}{l} (A \rightarrow B) \\ \vdots \\ A \\ \vdots \\ B \end{array} \right.$$

Conjunction introduction:

$$\left| \begin{array}{l} \vdots \\ A \\ \vdots \\ B \\ \vdots \\ (A \wedge B) \end{array} \right. \left| \begin{array}{l} \vdots \\ B \\ \vdots \\ A \\ \vdots \\ (A \wedge B) \end{array} \right.$$

Conjunction elimination:

$$\left| \begin{array}{l} \vdots \\ (A_1 \wedge \dots \wedge A_n) \\ \vdots \\ A_i \end{array} \right.$$

Disjunction elimination:

$$\left| \begin{array}{l} \vdots \\ (A \vee B) \\ \vdots \\ \left| \begin{array}{l} A \\ \vdots \\ C \end{array} \right. \\ \vdots \\ \left| \begin{array}{l} B \\ \vdots \\ C \end{array} \right. \\ \vdots \\ C \end{array} \right. \left| \begin{array}{l} \vdots \\ \left| \begin{array}{l} B \\ \vdots \\ C \end{array} \right. \\ \vdots \\ (A \vee B) \\ \vdots \\ \left| \begin{array}{l} A \\ \vdots \\ C \end{array} \right. \\ \vdots \\ C \end{array} \right.$$

etc.

Disjunction introduction

$$\left| \begin{array}{l} \vdots \\ \vdots \\ A \\ \vdots \\ (A \vee B) \end{array} \right. \left| \begin{array}{l} \vdots \\ \vdots \\ B \\ \vdots \\ (A \vee B) \end{array} \right.$$

Negation introduction:

$$\left| \begin{array}{l} \left| \begin{array}{l} P \\ \vdots \\ Q \\ \vdots \\ \neg Q \end{array} \right. \\ \neg P \end{array} \right.$$

Negation elimination:

$$\left| \begin{array}{l} \vdots \\ \neg \neg A \\ \vdots \\ A \end{array} \right.$$

You can also use the rule of *Reiteration*, which allows you to write down any previous line, so long as the new occurrence is in a position that is subordinate to the same hypotheses as the original occurrence. (It is acceptable for the new occurrence to be subject to the same hypotheses *and more*, but never fewer hypotheses.)

Reiteration:

$$\left| \begin{array}{l} \vdots \\ A \\ \vdots \\ A \end{array} \right.$$

You may write down a *hypothesis* on any line, so long as you underline it, and start a new vertical line to keep track of the hypothesis. Once you make a hypothesis, you are stuck with it, unless you get rid of it using one of the above rules. Here is an example, with the hypothesis on the first line:

1	Q	hyp
2	.	
3	.	
4	.	