

RULES FOR SENTENTIAL LOGIC

|   |  |   |   |
|---|--|---|---|
| <p>&amp;I</p> $\frac{\begin{array}{c} A \\ B \end{array}}{A \& B} \quad \frac{\begin{array}{c} A \\ B \end{array}}{B \& A}$ | <p>&amp;O</p> $\frac{A \& B}{A} \quad \frac{A \& B}{B}$  | <p><math>\sim</math>&amp;O</p> $\frac{\sim(A \& B)}{A \rightarrow \sim B}$                    | <p>&amp;D</p> $\begin{array}{ l} \text{SHOW: } A \& B \\ \text{SHOW: } A \\ \text{SHOW: } B \end{array}$                  |
| <p><math>\vee</math>I</p> $\frac{A}{A \vee B} \quad \frac{A}{B \vee A}$   | <p><math>\vee</math>O</p> $\frac{\begin{array}{c} A \vee B \\ \sim A \end{array}}{B} \quad \frac{\begin{array}{c} A \vee B \\ \sim B \end{array}}{A}$                      | <p><math>\sim</math><math>\vee</math>O</p> $\frac{\sim(A \vee B)}{\sim A} \quad \sim B$       | <p><math>\vee</math>D(ID)</p> $\begin{array}{ l} \text{SHOW: } A \vee B \\ \sim(A \vee B) \\ \text{SHOW: } * \end{array}$ |
| <p><math>\rightarrow</math>I no such thing (see CD)</p>   | <p><math>\rightarrow</math>O</p> $\frac{\begin{array}{c} A \rightarrow C \\ A \end{array}}{C} \quad \frac{\begin{array}{c} A \rightarrow C \\ \sim C \end{array}}{\sim A}$ | <p><math>\sim</math><math>\rightarrow</math>O</p> $\frac{\sim(A \rightarrow C)}{A \& \sim C}$ | <p>CD</p> $\begin{array}{ l} \text{SHOW: } A \rightarrow C \\ A \\ \text{SHOW: } C \end{array}$                           |
|   | <p>DN</p> $\frac{A}{\sim \sim A} \quad \frac{\sim \sim A}{A}$  |   | <p><math>\sim</math>D</p> $\begin{array}{ l} \text{SHOW: } \sim A \\ A \\ \text{SHOW: } * \end{array}$                    |
| <p>*I</p> $\frac{\begin{array}{c} A \\ \sim A \end{array}}{*}$  |  | <p>DD</p> $\begin{array}{ l} \text{SHOW: } A \\ A \end{array}$                                | <p>ID</p> $\begin{array}{ l} \text{SHOW: } A \\ \sim A \\ \text{SHOW: } * \end{array}$                                    |