

Use of truth tables:

Proving or demonstrating tautological relations (i.e., relations such as tautological consequence that derive strictly from the effects of the truth-functional connectives)

Limitations of truth tables:

- 1) Their potentially inordinate size
- 2) Because truth tables are strictly truth-functional, they can demonstrate *only* tautological

New proof rules based on Boolean connectives
(allow us to carry out proofs sensitive to non-
tautological relations):

Conjunction Introduction: **$\wedge$ Intro**

Conjunction Elimination: **$\wedge$ Elim**

Disjunction Introduction: **$\vee$ Intro**

Disjunction Elimination: **$\vee$ Elim**

Conjunction Introduction: $\wedge$

Intro

We can conjoin any two or more sentences that we already know (or can assume) are true, thus building a new conjunction out of known parts.

1 **A**

2 **B**

□ If we these are each true *separately*, then we know they are true *together*.

A $\wedge$ B $\wedge$ Intro: 1,2