

4/6 - Natural Deduction 2

Where were we before?

- We had established some rules for manipulating statements syntactically
- We want to be able to manipulate things such as
 - Or (\vee)
 - And (\wedge)
 - Implies (\rightarrow)
 - Not (\sim)

AND:

- Introduction rule:
 - $A, B \vdash A \wedge B$
- Elimination rules:
 - $A \wedge B \vdash A$
 - $A \wedge B \vdash B$

OR:

- Introduction rules:
 - $A \vdash A \vee B$
 - $B \vdash A \vee B$
- Elimination rule:
 - $A \vee B, A \dots C, B \dots C \vdash C$

NOT:

- Introduction rule:
 - $A \dots \text{False} \vdash \sim A$
- Elimination rule:
 - $\sim A, A \vdash \text{False}$