

MORE EXAMPLES OF NATURAL DEDUCTION

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Problem 1. Let A , B , and C be propositions. Construct proofs of the following propositions in the style of natural deduction.

- (1) $A \wedge B \leftrightarrow B \wedge A$
- (2) $(A \wedge B) \wedge C \leftrightarrow A \wedge (B \wedge C)$
- (3) $(A \rightarrow B) \rightarrow ((B \rightarrow C) \rightarrow (A \rightarrow C))$