

Logic 1, WS 2006. Homework 2, given Oct 19, due Nov 9

1. Prove by using the truth table the equivalence:

$$A \wedge (B \vee C) \equiv (A \wedge B) \vee (A \wedge C).$$

2. Give a natural style proof of the formula:

$$((B \vee C) \wedge (B \Rightarrow A) \wedge (C \Rightarrow D)) \Rightarrow (A \vee D).$$

3. Construct the sequent proof-tree of the formula:

$$((A \vee B) \Rightarrow C) \Rightarrow ((A \Rightarrow C) \wedge (B \Rightarrow C)).$$

4. Formulate the sequent rule for the situation when the goal is a disjunction, and prove it using the sequent rules of the “small calculus”.