Logic 1, WS 2016. Homework 5, given Nov 10, due Nov 17.

1. Prove the correctness of the sequent rules for negation in the goal and for conjunction in the assumptions.

2. Discover the sequent rules for implication and equivalence, by using equivalence rewriting and the rules for negation, conjunction, and disjunction.

3. Prove in natural style:

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

4. Prove by sequent calculus:

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