

Logic 1, WS 2014. Homework 3, given Oct 23, due Nov 3.

1. Find the truth value of disjunction over the empty set.
2. Prove by reducing both sides to CNF:

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

3. For conjunctions over sets, find equivalences involving truth constants.
4. Find equivalent formulae of implications and equivalences containing truth constants.
5. Show validity by reducing to CNF:

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