

Automated Theorem Proving, SS 2020. Homework 5

1. Prove in natural style that:

(a) $((A \vee B) \Rightarrow C) \Rightarrow ((A \Rightarrow C) \wedge (B \Rightarrow C)),$

(b) $((A \wedge B) \Rightarrow C) \Rightarrow ((A \Rightarrow C) \vee (B \Rightarrow C)),$

(c) $((A \Rightarrow C) \wedge (B \Rightarrow C)) \Leftrightarrow ((A \vee B) \Rightarrow C)$

(d) $((A \Rightarrow B) \wedge (B \Rightarrow C)) \Rightarrow ((A \wedge B) \Rightarrow C)$

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

2. Construct the sequent proof for all formulae from the previous exercise.