

1 Propositional Sequent Proofs

Problem 1.1. Prove the following sequents using the proof rules linked to on the homework page.

1. $\vdash \neg\neg p \Rightarrow p$

2. $\vdash p \vee \neg p$

3. $\vdash \neg(p \wedge q) \Rightarrow (\neg p \vee \neg q)$

4. $\vdash \neg(p \vee q) \Rightarrow (\neg p \wedge \neg q)$

5. $\vdash (p \wedge (p \Rightarrow q)) \Rightarrow q$

6. $\vdash ((p \wedge q) \Rightarrow r) \Rightarrow ((p \Rightarrow r) \vee (q \Rightarrow r))$