

Mathematical Logic Honours / 2008

Assignment 5

March 6, 2008

1. Derivations in Semantic Tableau: CM 2006 Lecture notes, p. 34: 1g;
p.28: 2f.
2. Derive in Natural Deduction:
 - (i) $\vdash_{\mathbf{ND}} ((p \rightarrow q) \wedge (p \rightarrow \neg q)) \rightarrow \neg p$;
 - (ii) $A \rightarrow C, B \rightarrow C \vdash_{\mathbf{ND}} (A \vee B) \rightarrow C$.
3. Transform the formula

$$\neg((r \rightarrow \neg(p \vee \neg q)) \rightarrow \neg(\neg p \rightarrow (r \wedge \neg q)))$$

to CNF and to DNF.

DUE: March 13, 2008.