

Exercise Sheet 12g

Propositional Logic – Natural Deduction

Let F be the formula $(A \wedge \neg B) \vee B \rightarrow B \vee A$

and let G be the formula $(A \wedge B \rightarrow C \vee \neg D) \rightarrow A \wedge D \rightarrow \neg C \rightarrow \neg B$

1. Provide parse trees corresponding to F and G
2. Provide a constructive Natural Deduction proof of F
3. Provide a constructive Natural Deduction proof of G
4. Provide an example of a valuation satisfying F . Is G falsifiable.