

PHI 312 : pset 7

In this problem set, you will supply some of the details of the arguments on pages 12–15 of the notes.

1. Page 12, Fact 4.7 says that $E_{\neg\phi} = E_{\neg\phi'}$ when $E_\phi = E_{\phi'}$. Explain why this is true.
2. Show that in the Boolean algebra $L(T)$, $E_\phi \leq E_\psi$ if and only if $\phi \vdash \psi$.
3. In the proof of Proposition 4.9, explain why \bar{f} is a Boolean homomorphism. [There is a typo in the notes: \hat{f} should be replaced with \bar{f} .]
4. Consider the theory T_B described in Proposition 4.10. Show that for every $\phi \in \text{Sent}(\Sigma_B)$ there is a $p \in \Sigma_B$ such that $T_B \vdash p \leftrightarrow \phi$.