Exercise Sheet 9
CS 2210 Logic for Computer Scientists (Hitzler)
Solutions due: Thursday March 19, 2015, 11am

Exercise 46 Show Theorem 2.6.8 part 2.
Hint: This needs less than two lines: try to reduce it to part 1 of the theorem.

Exercise 47 (no hand-in) For any formula F, let F' be the formula obtained from F by replacing all $\vee$ by $\wedge$, and by replacing all $\wedge$ by $\vee$. Furthermore, let $\overline{F}$ be obtained from F by replacing each occurrence of an atomic formula A in F by $\neg A$.
Example: For $F = (A \wedge B) \vee \neg C$, we have $F' = (A \vee B) \wedge \neg C$ and $\overline{F} = (\neg A \wedge \neg B) \vee \neg\neg C$; and $\overline{F}' = (\neg A \vee \neg B) \wedge \neg\neg C$.
Show by structural induction: $F \equiv \neg\overline{F}'$ for each formula F.