

Exercise Assignment for chapter on axiomatics.

1. Using the fact that $(A \vee B) \supset (B \vee A)$ is a theorem (but making use of no other derived rules or theorems), show that $A \supset \sim\sim A$, $\sim\sim A \supset A$ and $(A \supset B) \supset (\sim B \supset \sim A)$ are theorems.
2. (i) Show that $A \vee (B \vee C) \supset B \vee (A \vee C)$ is a theorem of SL without making use of any previously derived rules or theorems.
(ii) Hence show that $(A \supset (B \supset C)) \supset ((B \supset (A \supset C))$ and $(B \supset C) \supset ((A \supset B) \supset (A \supset C))$ are theorems.