CS486 Applied Logic Assignment 4 Due Thursday, Mar 1, 2001

Reading: Please study Smullyan, p. 36-40 again;
also read Chapter XI, p. 101-108

Exercises:

1. Give block tableau proofs or falsifications of these formulas:

   (i) $((p \supset q) \supset p) \supset p$
   (ii) $((p \supset r) \supset (q \supset r)) \supset (\sim p \supset q) \supset r$
   (iii) $(p \supset (q \supset r)) \supset ((q \;\&\; \sim r) \supset \sim p)$

2. Give three examples of properties of sets which are *not of finite character* and prove that they are not (see p. 32).

3. Write a precise symbolic definition of what it means for a set *S* of formulas to be *satisfiable*.

4. Is it true that the set of all tautologies is the intersection of all saturated sets? Prove your answer.