

Reading: Please read Snullyan p. 24 - 38.

Suggested additional reading: Nerode and Shore Chapter 1, Section 5, p. 31 – 33.

- (1) Solve at least 3 examples in the exercise on page 24.
Write up one of (7) or (8) and tell us how many you solved.
- (2) Provide a short intuitive summary of the *Consistency Theorem* (page 25) and *Completeness Theorem* (page 28), less than a page for each with a minimum use of symbols.
- (3) Solve exercise 2. page 30.
- (4a) If $P = NP$, how would we find short proofs of tautologies?
- (4b) Why does $P = NP$ imply that $NP = CoNP$? If $NP \neq CoNP$, what does this say about $P = NP$?
- (5) For extra credit, solve the exercise on page 36.