

# Problem Set 3

Due Date: Thurs, Feb 13

## Reading

Please read Smullyan, Chapter XI, p. 101-108 for Thurs, Feb 13

## Problems

1. Translate the following arguments into propositional formulas and prove them right or wrong:
  - (a) If either wages or prices are raised, there will be inflation. If there is inflation, then either Congress must regulate it or the people will suffer. But if the people suffer, then congressmen will be unpopular. However, Congress does not regulate inflation and congressmen are not unpopular. Therefore, wages do not rise.
  - (b) Jones has filed a lawsuit against Rogers because of a contract. Jones will win the lawsuit if and only if Rogers has entered into the contract, the contract is legal, and Rogers has not performed the contract. Rogers has entered into the contract only if he has accepted Jones' offer. But, in fact, Rogers has not accepted Jones' offer. Therefore Jones will lose the lawsuit.
2. Solve the Exercise on p. 30, items 2
3. State the tableau rules for the *joint denial connective*  $\downarrow$  (c.f. problem set 1) and prove that they give a correct and complete proof system for propositional logic.