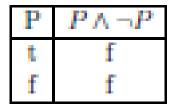
## **Propositional Logic Practice Questions**

- Prove the following using either resolution or traditional logic, using these propositions:
  - S: I study; G: I get good grades; E: I enjoy.
  - 1. If I study I make good grades. 2.
  - 2. If I do not study I enjoy.
    - ∴ either I make good grades or I enjoy
- Translate the following Propositional Logic to English sentences.
  - Let:
  - \_ E=Liron is eating
  - \_ H=Liron is hungry
- Translate the following English sentences to Propositional Logic.
  Propositions: (R)aining, Liron is (S)ick, Liron is (H)ungry, Liron is (HA)appy,
  Liron owns a (C)at, Liron owns a (D)og
- Which of the following propositions are tautologies? Which are contradictions?
  Why?
  - (a) Three is a prime number.
  - (b) It is raining or it is not raining.
  - (c) It is raining (P) and it is not raining (:P).
  - Which of the following propositions are tautologies? Why?



- Which of the two following propositions are equivalent in the sense that one can always be substituted for the other one in any proposition without changing its truth value? Why?
  - (a) first proposition: P ⇒ Q second proposition: ¬P ∨ Q