

Week 13 Tutorial Session

- (1) Prove that the following language is NP-complete:

$$L = \{\langle \varphi \rangle \mid \varphi \text{ is a boolean formula with at least two satisfying assignments}\}$$

- (2) Suppose some polynomial-time algorithm A decides the *decision* problem

$$\text{CLIQUE} = \{\langle G, k \rangle \mid \text{Graph } G \text{ contains a clique of size } k\}.$$

Using A , give a polynomial-time algorithm to search for a clique of size k in a graph G , whenever such a clique exists.