(1) Prove that the following languages are NP-complete:

(a) \( L_1 = \{ \langle \varphi \rangle \mid \varphi \text{ is a boolean formula with at least two satisfying assignments} \} \)

(b) \( \text{HALF-CLIQUE} = \{ \langle G \rangle \mid G \text{ is a graph on } n \text{ vertices containing a clique of size at least } n/2 \} \)

(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.