I. Problem Set 7, Problem III (page 146).

II. Show that the following problem is NP-complete.

Given a CNF boolean expression E of length n and having at most $\sqrt{n}$ variables, is E satisfiable?

III. Show that the following problem is NP-complete.

Given a connected graph G, with n vertices, and a value $k \leq \frac{n}{100}$, does G have a vertex cover of size no more than k?