1. (4 pts) Exercise 7.7 on page 295 of the text, show that NP is closed under union and concatenation, i.e. prove that
   If $L_1$ and $L_2$ are both in NP then $L_1 \cup L_2$ is in NP, and
   If $L_1$ and $L_2$ are both in NP then \{uw \mid u \in L_1, w \in L_2\} is in NP.

2. (3 pts) Exercise 7.9 on page 295 (Show that TRIANGLE is in P).

3. (4 pts) Exercise 7.11 on page 295 (Show that ISO is in NP).

4. (6 pts) Problem 7.24 on page 296 (Show that $\neg$SAT is NP-complete).

Recommended (not to be turned in):

- Exercise 7.5, 7.6,
- one of problems 7.12 or 7.13
- Problem 7.26 (try reduction from SAT)