1. Prove that Independent Set $\leq_p$ Set Packing.

2. Prove that if there is any problem in NP that cannot be solved in polynomial time, then no problem in NP-complete can be solved in polynomial time.

3. Prove that 3-SAT $\leq_p$ Hamiltonian Cycle. Describe the main steps of the reduction in your own words. Do not copy the proof from the book.

4. Chapter 8, Problem 1

5. Chapter 8, Problem 2

6. Chapter 8, Problem 3

7. Chapter 8, Problem 4

8. Chapter 8, Problem 5