Submissions: This assignment is due on the 3rd of Dec, 2019. Please note:

1. Each student must submit his or her own assignment.
2. Solutions should preferably be typed in Latex, MSWord or other such word processing software, or printed clearly. In either case, submit a hard copy of your solution.
3. You must write your name and UUID clearly on your submitted assignment.
4. Staple the pages together. Write your name and UUID on top of each page.
5. It is preferable that you submit solutions to me in class, but it is ok if you can’t do that - just make sure to submit solutions by end of day (i.e., 11:59 PM) by sliding it under my office door (DH 307).

Academic Integrity: You are encouraged to work in groups, but everyone must write out their own solutions. Absolutely no word to word copying is allowed. If you have worked with other students on the assignment or referred to external sources, please mention all names and sources on your assignment.

Partial solutions: Document your efforts at solving a problem even if you cannot solve it. Write why your approach failed.

DPV = Dasgupta-Papadimitriou-Vazirani book. JE = Jeff Erickson’s notes. Your repertoire of NP-complete problems to use in reductions can come from those discussed in the book chapter or in previous exercises. Of course, you may use any other problem as an auxiliary problem, provided you prove it NP-complete using the above mentioned repertoire.

Problem 1 [20 pts]: Problem 8.8 from DPV.
Problem 2 [20 pts]: Problem 8.12 from DPV.
Problem 3 [20 pts]: Problem 8.19 from DPV.
Problem 4 [20 pts]: Problem 8.20 from DPV.
Problem 5 [20 pts]: Problem 8.23 from DPV.