CS 6363: Design and Analysis of Algorithms – Fall 2019
Homework #6 – Not graded
Professor D.T. Huynh

Problem #1. Do Problem # 34.5-5 in [CLRS], page 1101.

Problem #2. Do Problem # 34-1 (a), (b) in [CLRS], page 1101.

Problem #3. Do Problem # 34.4-6 in [CLRS], page 1086.

Problem #4. The k-coloring problem is to determine whether a given graph $G = (V, E)$ can be colored using k colors (i.e., there exists a function $c : V \longrightarrow \{1, 2, \ldots k\}$ such that $c(u) \neq c(v)$ for every edge $(u, v) \in E$.) Show that 3-coloring is NP-complete. (For NP-hardness construct a reduction from 3-SAT to 3-coloring. Cf. [CLRS], page 1103).