University of Washington
Department of Computer Science and Engineering
CSE 421, Autumn 2016

October 18, 2016

Homework 4, Due Wednesday October 26, 2015

Problem 1 (10 points):

Page 195, Exercise 14

Problem 2 (10 points):

Page 192, Exercise 10

Problem 3 (10 points):

Let $G = (V, E)$ be a directed acyclic graph with lengths assigned to the edges. Give an $O(n + m)$ time algorithm that given vertices $s, t \in V$ finds a maximum length path from s to t. Justify that your algorithm is correct.

Problem 4 (10 points):

Let $G = (V, E)$ be a directed graph with lengths assigned to the edges. Let $\delta(u, v)$ denote the shortest path distance from u to v. Prove that for all vertices $u, v, w \in V$:

$$\delta(u, w) \leq \delta(u, v) + \delta(v, w).$$

Problem 5 (10 points):

Page 198, Exercise 19.

Problem 6 (10 points):

Page 202, Exercise 27