

Algorithms, Spring 2022 at CIS – Homework 3

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Please answer the following questions and submit a **pdf** file to neoscholar education platform before **2022/3/19 23:59pm**.

Problem 1

<https://leetcode.com/problems/path-with-maximum-probability/>

Problem 2

A graph G has unique s - x shortest-paths for every x . The shortest-path tree is obtained from Dijkstra's algorithm by the union of the shortest paths from s to every other node. We now add 100 to each edge length. Either argue that the shortest-path tree remains the same, or give a counterexample.

Problem 3

For the following graph, step through Floyd's algorithm (Floyd-Warshall), showing the \mathbf{D} matrix at each step, and report the resulting shortest paths between all pairs of vertices.

