CS 331: Algorithms and Complexity (Spring 2024)
Unique Number: 52765, 52770

Assignment 2

Due on Thursday, 1 Febrauary, by 11.59pm

Problem 1: Short Answers Section

For this section, restrict answers to no more than a few sentences. Most answers can be expressed in a single sentence. Unless otherwise stated, briefly justify. No proofs are necessary for this section.

(a) True, since at first there is a root node with no edges. Every subsequent node adds one edge.

(b) True, BFS would iterate every edge set of every vertex, so $\mid V \mid \cdot \mid V \mid$ edges.

(c)

(d) False, DFS will in general output deeper trees, but not always.

(e) True, if there were multiple paths, then that means there's a cycle. Trees have no cycles.

(f)

Problem 2

(a)

(b)

Problem 3