

Homework #4

COSC 5110
Analysis of Algorithms
Fall 2019

Due: Wednesday, December 18, 5:00pm

1. Exercise 2.27.
2. Exercise 5.3.
3. Exercise 6.17.
4. Recall the CLIQUE decision problem: given a graph G and a number k , does G have a clique of size k ?
 - (a) Show that if CLIQUE is in P, then there is a polynomial-time algorithm that takes a graph G as input and outputs the size of a largest clique in G .
 - (b) Show that if CLIQUE is in P, then there is a polynomial-time algorithm that takes a graph G as input and outputs a largest clique in G .