CPSC 406: ASSIGNMENT 4

DUE MARCH 19, 7:00PM

Reading

Chaper 8 in the text.

Problem 1

In the vertex covering problem we are given a graph G consisting of a set of vertices V and edges E. We would like to determine if for a given integer k there is a subset V' of V with the size of V' less than k such that every edge has at least one endpoint in V'.

Prove that vertex cover is NP complete by showing 3-SAT is polynomial time reducible to it.

Problem 2

Exercise 8.6 (page 507) in Kleinberg. (Hint: Show that vertex cover is polynomial time reducible to monotone satisfiability with few true variables.)

Submission Instructions

Type up your solutions with LaTeXand submit a pdf to the digital dropbox by the due date above.