

CS 5200 PSET - 4

Avah Banerjee

Due on: March 21, 11:59 PM

Problem 1 Problem 5.20 from the book.

Problem 2 Problem 5.23 from the book.

Problem 3 Problem 5.29 from the book.

Problem 4 Let $G = (V, E, w)$ be some undirected edge weighted graph and T be a spanning tree of G . Show that the task of verifying whether T is a minimum spanning tree of G can be reduced to problem 4 from PSET 2 for some suitable X and S (recall– X is a set of elements with an unknown total order and S is a collection of subsets of X). Determine X and S in this case. Assume there is a way to determine the maximum of all subsets in S in linear time in total. Show that you can verify whether T is a minimum spanning tree of G in linear (in m and n) time as well.