Algorithms Tutorial 8

March 2, 2011

Question 0.1. *Given a set $S \subset \mathbb{Z}^+$ of values. Design a $\frac{1}{2}$-approximation algorithm to partition S into m non-empty parts S_i ($1 \leq i \leq m$) such that $\min_i \Sigma_{s_j \in S_i} s_j$ is maximized. Assume that all elements in S have value less than $\frac{\Sigma_{s_i \in S} s_i}{2m}$.*

This is problem 7 on pg. 655 of the Kleinberg & Tardos book.

Question 0.2. *Given a 3-uniform hypergraph H, design a $\frac{1}{3}$-approximation algorithm to find the maximum matching.*

This is problem 9 on pg. 657 of Kleinberg & Tardos book.