BU CLA CS 530: Analysis of Algorithms

Spring 1999

Problem Set 11

Due Thursday April 8, by 5:00 pm, in my mailbox in the main office of the CS department. Late submissions not accepted.

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1. Exercise 36.4-7, page 946, in [CLR].

2. Exercise 36.5-4, page 960, in [CLR]. Assume that all the numbers in S are positive integers. Do *not* use the reduction 1-in-3-CNF-SAT$\leq_{\mathrm{P}}$ PARTITION (to be presented in lecture).
   Hint: Show instead that SUBSET-SUM $\leq_{\mathrm{P}}$ PARTITION. The decision problem SUBSET-SUM is defined in [CLR].

3. Exercise 36.5-6, page 960, in [CLR].
   Comment: You are asked to show that LONGEST-SIMPLE-CYCLE is "NP-complete" — this should be "NP-hard". LONGEST-SIMPLE-CYCLE is an optimization problem, and the theory of NP-completeness applies to decision problems only.
   Hint: This is easy, if you look at it the right way.

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