Exercise sheet 11, CompComp, Spring 2018

Please return Thursday May 3, in class

Problem 1. Claim: SPACE(1) = TIME(1). Prove or disprove.

Problem 2. The problem SET PACKING has instances consisting of a finite collection C of finite sets and of a positive integer $K \leq |C|$. The question to be decided is whether C contains at least K disjoint sets. – The problem CLIQUE has instances consisting of an undirected graph $G = (V, E)$ and a positive integer $K \leq |V|$. The question to be decided is whether G contains a *clique* of size at least K, that is, a subset $V' \subseteq V$ such that every two vertices in V' are joined by an edge in E. Reduce SET PACKING to CLIQUE. Don't forget to demonstrate that your reduction can be done in polynomial time!