Theory of Computation

Homework 3
Due: 9:10, 2009/11/24

Problem 1. Prove that if $\text{coNP} \neq \text{NP}$, then $\text{P} \neq \text{NP}$.

Problem 2. It is known that the 3-COLORING problem is NP-complete. Use this fact to prove that for any given $k > 3$, it is NP-hard to ask if a graph can be colored by k or fewer colors such that no adjacent nodes have the same color.