CSC 341: Automata, Formal Languages, and Complexity Theory

Worksheet #01

Name _____

1 Review

Answer the following questions:

1. In few sentences state the objectives of this class.
2. Name the central areas of the theory of computation. Define each area in one/two sentence(s).
3. Think of a real-life problem (A) that can be reduced to another problem (B) which you have already learnt in the some of the previous classes.
4. We have two problems at hand:
   (a) Sort the list of enrolled students of a class in alphabetic order of their names.
   (b) From an undirected graph, find the largest clique. *(Note: A clique of a graph G is a complete subgraph of G.)*

   Are both of the problems equally difficult? Why/why not? Just put down your thoughts. Your statement (at least at this moment) does not have to be mathematically proven.

2 Proof Techniques

Using either construction/contradiction/induction strategy, prove that

Theorem. *Two integers a and b are consecutive if and only if $b = a + 1$*