

Quiz 3

Problem 1

There are DFAs that are equivalent to a given NFA, N . Suppose N has n states and N is minimal; that is we cannot eliminate any states in N .

- Suppose we construct a DFA, D , that is equivalent to N using the subset construction method. What is the (theoretically) maximum number of states in D ?
- Let $|D|$ and $|N|$ are the number of states in D and N , respectively. Is it possible that $|D| < |N|$?

Problem 2

The following is the state diagrams of an NFA, N . We again assume that we construct a DFA, D , that is equivalent to N using the subset construction method.

- Suppose an input string to N starts with a character 0 . What are the possible states in N after processing 0 ?
- What is the start state of D ? Express it as a set of states in N .
- What is the accept state of D ? Express it as a set of states in D ?

