CSE 2001: Introduction to the Theory of Computation
Tutorial 2, Sept 26, 7 pm

Problems:

1. Give a recursive definition of the set defined below:

$$S = \{x | x = 3m, m \in \mathbb{N}\}$$

2. Give a recursive definition of the set defined below:

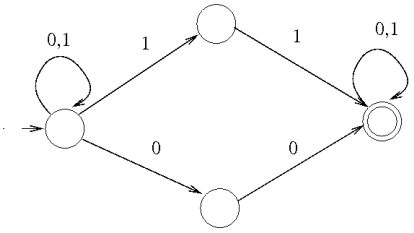
$$S = \{a^n b c^n | n \in \mathbb{N} \cup \{0\}\}$$

3. Consider the alphabet $\Sigma = \{a, b\}$. Give a recursive definition of the set of all odd length palindromes over Σ.

4. Consider the alphabet $\Sigma = \{a, b\}$. Give a recursive definition of the set of all even length palindromes over Σ.

5. Combine the answers to the two previous questions and give a recursive definition of the set of all palindromes over Σ.

6. What language does the NFA in the figure below accept?



7. Find a NFA that accepts the set of binary strings beginning with 010 or ending with 110.