Team Assignment 9

Team Number and Initials _____ _____ _____ _____ _____

Describe algorithms to decide the following problems:

1. The DFA acceptance problem A_{DFA}. Given a DFA D and a string w, does D accept w.

2. The NFA acceptance problem A_{NFA}. Given an NFA N and a string w, does N accept w.

3. The regex acceptance problem A_{REX}. Given a regular expression R and a string w, does R produce w.

4. The DFA emptiness problem E_{DFA}. Given a DFA D, determine if the language of D is empty.

5. The DFA equivalence problem EQ_{DFA}. Given two DFAs A and B, determine whether $L(A)$ is the same as $L(B)$.

6. The CFG acceptance problem A_{CFG}. Given a context-free grammar G and a string w, does G produce w.

7. The CFG emptiness problem E_{CFG}. Given a context-free grammar G, determine if the language of G is empty.