This homework assignment is a written assignment that should be turned in at the beginning of class on Tuesday January 27.

1. Write regular expressions for the following languages:
   
   (a) Strings over the alphabet \{a, b, c\} with an even number of bs (e.g., “abaabcbb”, “aaaaa”, etc.).
   
   (b) Strings over the alphabet \{a, b, c\} where the first a precedes any occurrence of b (e.g., “ccaa”, “abc”, “acacb”, etc.).
   
   (c) Strings over the alphabet \{0, 1\} that represent powers of two without leading 0s (e.g., “1”, “10”, etc.).

2. (a)-(c) Draw the non-deterministic finite state machines (NFAs) for the languages in 1(a)-(c).

3. Convert the following NFA to a DFA using the subset-construction method.

4. Give an RE that defines the same language as the NFA in Problem 3.