1. Write regular expressions for the following languages:
   (a) Strings over the alphabet \{a, b, c\} with an odd number of \(a\)s.
   (b) Strings over the alphabet \{a, b, c\} where the first \(a\) precedes any occurrence of \(b\).
   (c) Strings over the alphabet \{0, 1\} that represent powers of two.

2. (a)-(c) Draw the 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 for that defines the same language as the NFA in Problem 3.