1. Give a regular expression that will accept all valid phone numbers of the form xxx-xxxx. Note that phone numbers cannot start with 0 or 1, and cannot start with x11. Assume that Σ (the alphabet) for the strings you are accepting is \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, −\}.

2. Give a DFA for that regular expression.

3. Give a non-deterministic FSA for the following regular expression:

   \(((01)^+|(11)^+)\)^*

4. Produce the deterministic equivalent of the NFA you built in question 3.

5. Minimize the deterministic FSA using the algorithm from the book.

6. Can the language \((i \ g)^i, i \geq 0\) be recognized by an FSA? Why or why not?

7. Can the language \((k \ g)^k\) for one particular \(k\) be recognized by an FSA? Why or why not?