**Challenging REs.** Construct a regular expression for each of the following languages over the binary alphabet or prove that no such regular expression is possible:

* All strings except 11 or 111.
* Strings with 1 in every odd-number bit position.
* Strings with an equal number of 0s and 1s.
* Strings with at least two 0s and at most one 1.
* Strings that when interpreted as a binary integer are a multiple of 3.
* Strings with no two consecutive 1s.
* Strings that are palindromes (same forwards and backwards).
* Strings with an equal number of substrings of the form 01 and 10.

**Exponential-size DFA.** Design a regular expressions of length *n* such that any DFA that recognizes the same language has an exponential number of states

**Extensions to NFA.** Add to [NFA.java](http://algs4.cs.princeton.edu/54regexp/NFA.java.html) the ability to handle multiway or, wildcard, and the + closure operator.