For each English description below, write a regular expression to recognize the set of strings (language) so described.

1. The set of all strings over \{a,b,c\} with an even number of \(b\)s.
2. The set of all strings over \{a,b,c\} whose second to last character is an \(a\).
3. The set of all strings over \{1,0\} that does NOT include two consecutive \(1\)s.
4. The set of all strings over \{1,0\} that starts with a \(0\) and ends with a \(1\).
5. The set of all strings over \{A-Z,0-9\} that start with a letter and include up to 5 additional characters each of which can be either a letter or a digit.

For each of the languages specified above, write a deterministic finite state automata to recognize the language.