Finite Automaton Examples

The automata shown in this handout were drawn at different times, and hence are not all the same style. I use either λ or ε for a λ-transition of an NFA.

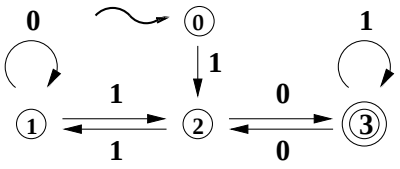

Figure 1: Describe the language accepted by this DFA. The word "numeral" should be in your answer.

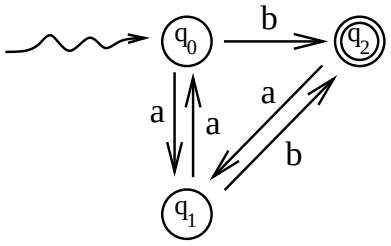

Figure 2: Draw an equivalent minimal DFA

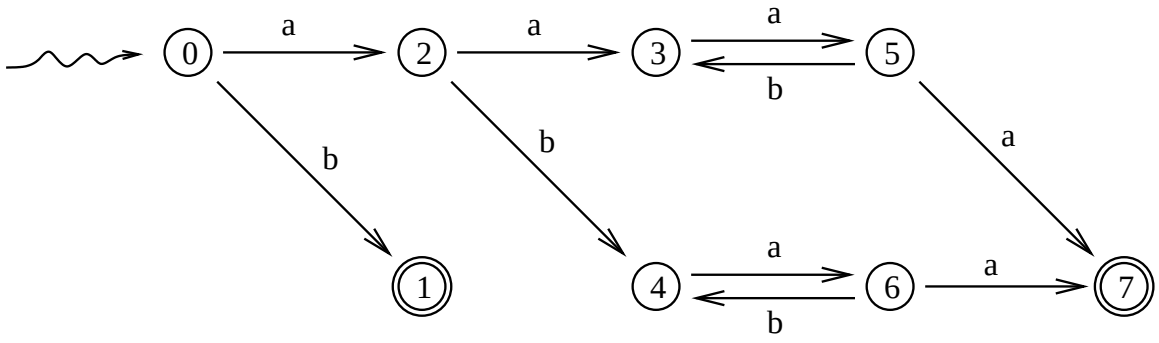

Figure 3: Minimize this DFA.

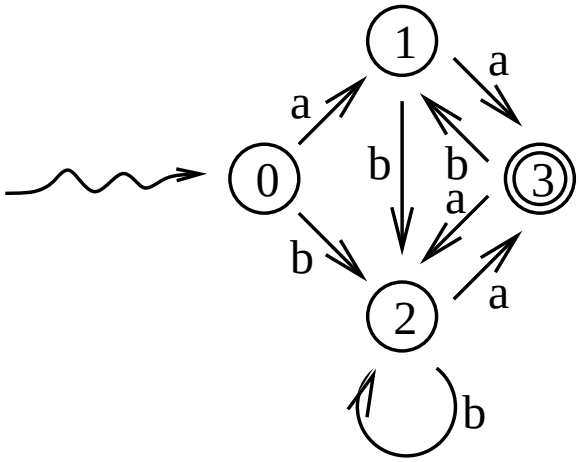

Figure 4: Draw an equivalent minimal DFA.

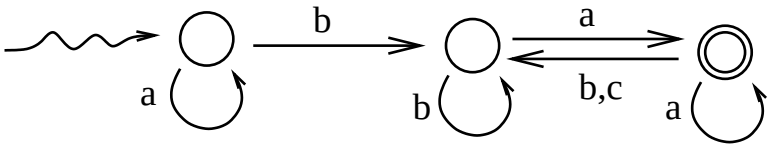

Figure 5: Write a regular expression for the language accepted by this DFA.

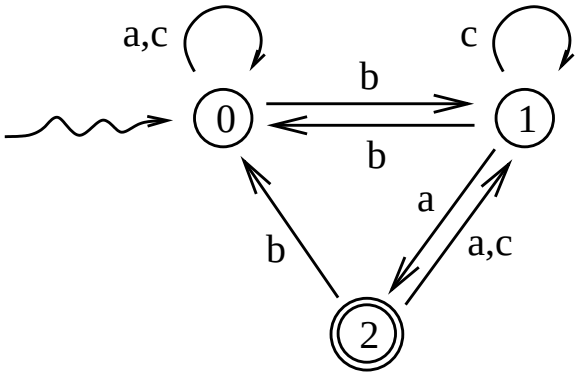

Figure 6: Give a right-linear grammar for the language accepted by this machine.

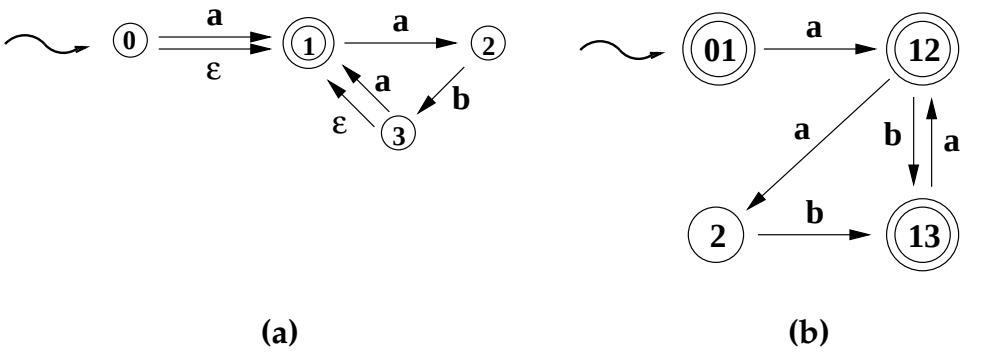

Figure 7: Draw a minimal DFA equivalent to the NFA shown in (a). Your answer should be the same as (b).

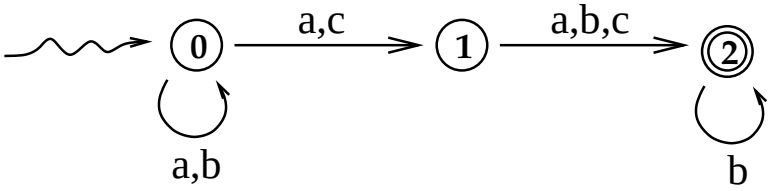

Figure 8: Give a minimal DFA equivalent to this NFA.

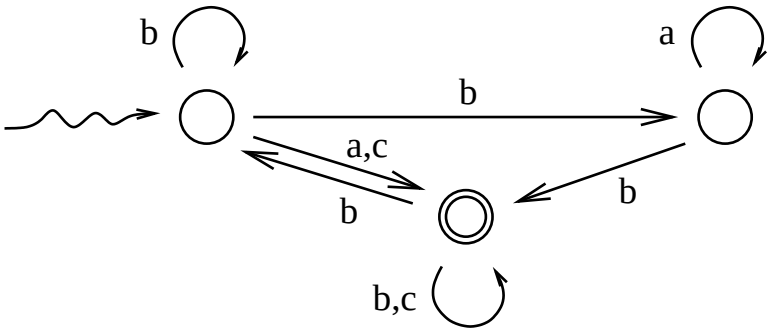

Figure 9: Give a grammar which generates the language accepted by this NFA.

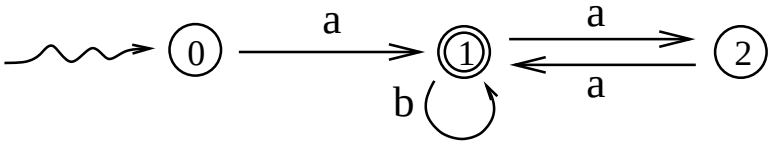

Figure 10: Write a regular expression for the language accepted by this NFA.

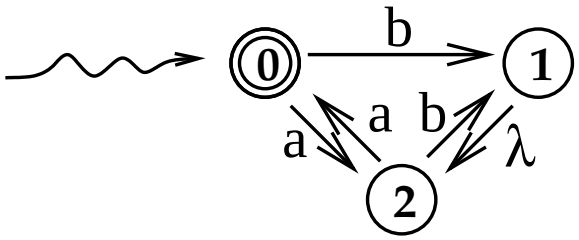

Figure 11: Write a regular expression for the language accepted by this NFA.

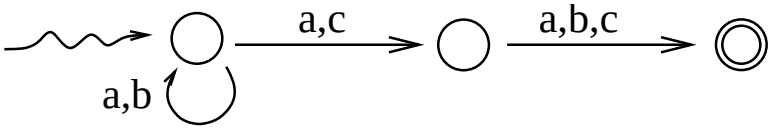

Figure 12: Give a minimal DFA equivalent to this NFA.

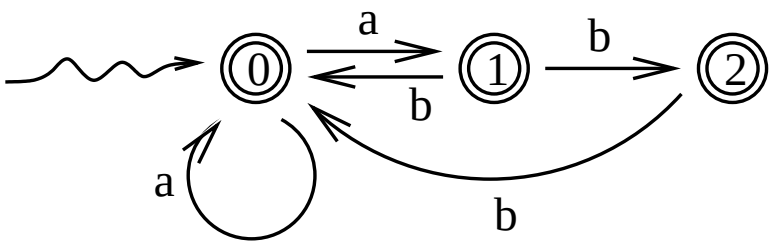

Figure 13: Give a grammar for the language accepted by this NFA.

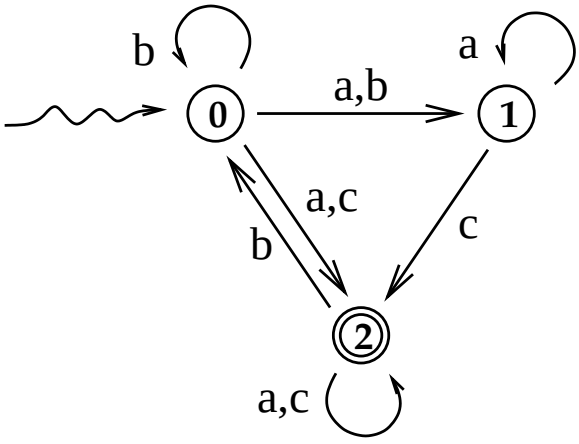

Figure 14: Give a regular expression for the language accepted by this NFA.

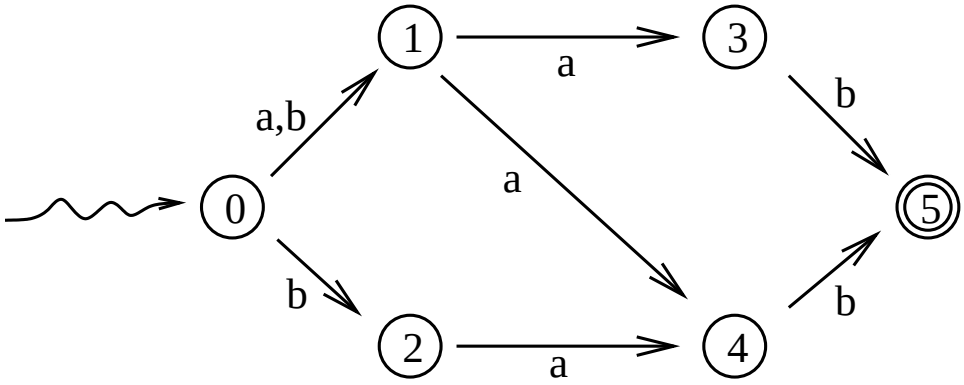

Figure 15: Draw a minimal DFA equivalent to this DFA.

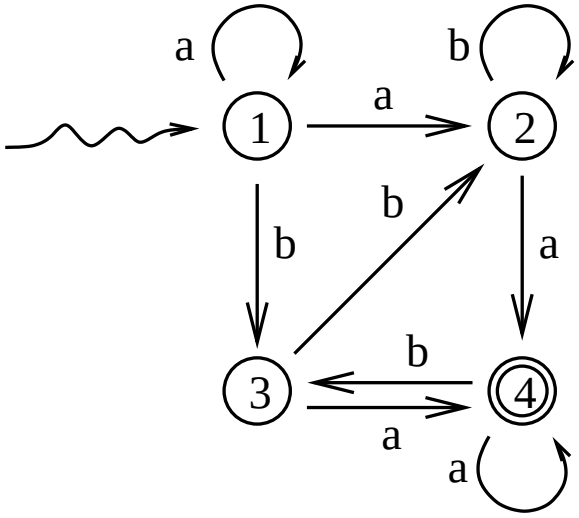

Figure 16: Give a right-linear grammar for the language accepted by this NFA.