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 $\lambda$ or $\varepsilon$ for a $\lambda$-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: Let $L$ be the language accepted by this DFA. Draw a minimal DFA that accepts $L$. 
Figure 5: Draw an equivalent minimal DFA.

Figure 6: Write a regular expression for the language accepted by this DFA.

Figure 7: Give a right-linear grammar for the language accepted by this machine.
Figure 8: Draw a minimal DFA equivalent to the NFA shown in (a). Your answer should be the same as (b).

Figure 9: Give a minimal DFA equivalent to this NFA.

Figure 10: Give a grammar which generates the language accepted by this NFA.

Figure 11: Write a regular expression for the language accepted by this DFA.
Figure 12: Write a regular expression for the language accepted by this DFA.

Figure 13: Give a minimal DFA equivalent to this NFA.

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

Figure 15: Give a minimal DFA equivalent to this NFA.
Figure 16: Give a regular expression for the language accepted by this NFA.

Figure 17: Draw a minimal DFA equivalent to this DFA.

Figure 18: Give a right-linear grammar for the language accepted by this NFA.