1. Sipser 1.10 c. star construction of $\emptyset$.
2. Sipser 1.16 b. NFA to DFA construction.
3. Sipser 1.28 b. Conversion of Regular expression to NFA.
4. Sipser 1.39. Show that for every $k > 1$ there is a language that is recognized by a DFA with $k$ states but not by one with only $k - 1$ states.