HW5  4.2.6 Solutions:

A) start with a DFA for L. replace all transitions out of final states to transitions to a trap state.

\[ F' = \{ q \text{ s.t. } q \in F \land \neg (\exists (x,y) \in \Sigma^{\star} \text{ s.t. } \delta(q_0,xy) = q \land \delta(q_0,x) \in F) \} \]

B) start with a DFA for L, make any state non accepting if there is a path from that state that leads to any accepting state. (including to itself)

\[ F' = \{ q \text{ s.t. } q \in F \land \neg (\exists y \in \Sigma^{\star} \text{ s.t. } \delta(q,y) \in F) \} \]

C) start with a DFA for L. minimize it. Make any state that leads to an accepting state an accepting state.

\[ F' = \{ q \text{ s.t. } q \in Q \land (\exists y \in \Sigma^{\star} \text{ s.t. } \delta(q,y) \in F) \} \]

- Ron Hose, Oct. 2004