Exercise 9
Given an automation $A$ with state $S = \{A, B, C, D\}$, alphabet $\Sigma = \{a, b\}$, initial states $I = \{A, D\}$, final state $F = \{C\}$, and transitions $T = \{(A, a, A), (A, b, A), (A, b, B), (A, b, C), (B, b, B), (B, b, A), (C, a, A), (C, b, D), (D, a, B), (D, b, B), (D, a, C)\}$. Draw the oracle automaton Oracle($A$). Is Oracle($A$) complete? Is it deterministic?

Exercise 10
Given $FA_A$ from Exercise 9, draw the optimized oracle-automaton Oracle($A$). Is Oracle($A$) complete? Is it deterministic? Justify your answer.

Exercise 11
Given $A$ with states $S = \{A, B, C, D\}$, alphabet $\Sigma = \{a, b\}$, initial/final states $I = \{A, B\}$, $F = \{C\}$, and transitions $T = \{(A, b, A), (A, a, C), (B, a, A), (B, a, B), (B, b, D), (C, b, D), (D, b, B)\}$

Draw the I/O-automaton for $FA_A$.

Exercise 12
Draw an I/O-automaton modelling the digital circuit shown on the right. Use $\Sigma := \Theta := \{0, 1\}$ as input- and output-alphabet.