Variant 8
FA = (Q, A, d, q0, F)
Q = {q0, q1, q2, q3, q4}
A = {a, b}
F = {q3}
  (q0, a) = q1
  (q1, b) = q2
  (q2, b) = q0
  (q3, a) = q4
  (q4, a) = q0
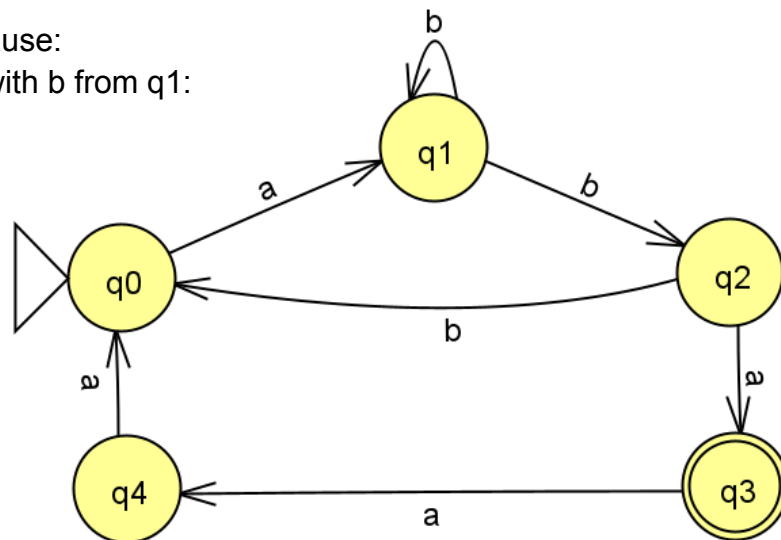 (q2, a) = q3
  (q1, b) = q1

1. Present the automaton in the form of a graph. Is this automaton deterministic or not? Why?
It is not deterministic because:
there are two transitions with b from q1:
  (q1, b) = q2
  (q1, b) = q1

2. Convert the Finite Automaton to the Regular Grammar.
G (V$_N$, V$_T$, S, P)
V$_N$ = {S, A, B, C, D}
V$_T$ = {a, b}
P= { $S \rightarrow aA$
      $A \rightarrow bB \mid bA$
      $B \rightarrow bS \mid aC$
      $C \rightarrow aD \mid \varepsilon$
      $D \rightarrow aS$ }

3. Transform nondeterministic finite automaton (NFA) into a deterministic automaton (DFA). Present the DFA in the form of a graph.