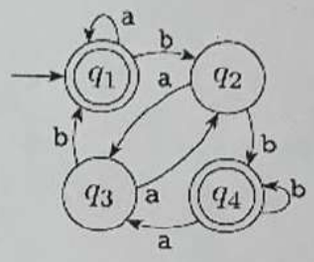
This quiz has 3 questions, for a total of 6 points.

Question 1 ..... *2 points*

The following is the state diagram of a DFA M2. Give a formal description of M_2.



M_2

2

$Q = \{q_1, q_2, q_3, q_4\}$

$\Sigma = \{a, b\}$

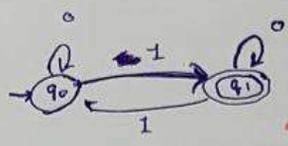
	a	b
q_1	q_1 *	q_2
q_2	q_3	q_4 *
q_3	q_2	q_1 *
q_4	q_3	q_4 *

Start/Initial State = q_1

final State = q_1, q_4

Question 2 ..... *2 points*

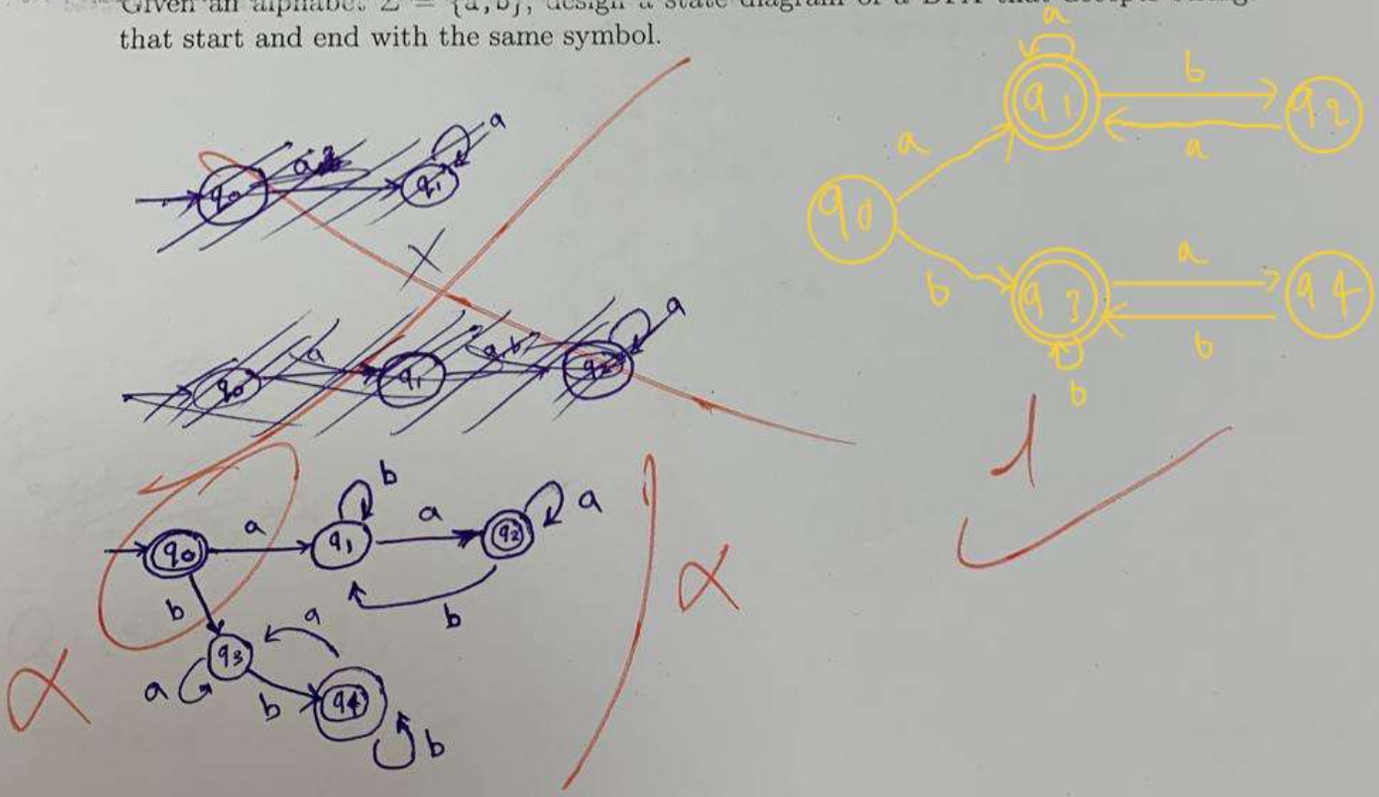
Given an alphabet $\Sigma = \{0, 1\}$, design a state diagram of a DFA that accepts strings with an odd number of the symbol 1.



2

Question 3 ..... *2 points*

Given an alphabet $\Sigma = \{a, b\}$, design a state diagram of a DFA that accepts strings that start and end with the same symbol.



1