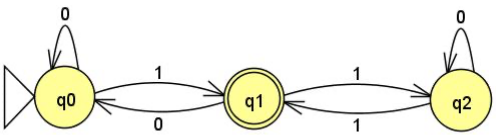
Homework 2 Total points: 10pts
Section 2.1 page 48 #1, #3(b) (d), #4 (b), #14

Section 2.1

#1) (2 pts) Which of the strings 0001, 01101, 00001101 are accepted by the dfa in figure 2.1?

Fig 2.1

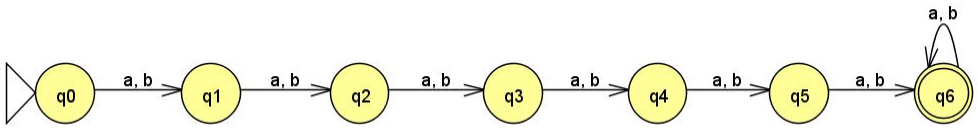


Answer: All of the strings are accepted by the dfa in figure 2.1

#3) For Σ = {a, b}, construct a dfa that accepts the sets consisting of:

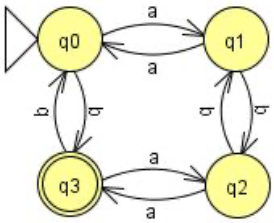
(b) (2 pts) all strings of length greater than 5

Answer:



(d) (2 pts) all strings with an even number of a's and an odd number of b's

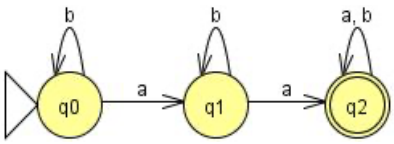
Answer:



#4) For Σ = {a, b}, construct a dfa that accepts the sets of:

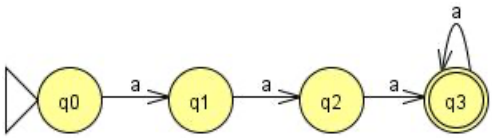
(b) (2 pts) all strings with at least two a's

Answer:



#14) (2 pts) Show that L = $\{a^n : n \geq 3\}$ is regular

Answer:



L is regular because we there exists an FA for the language.