

Homework 6 CS3110

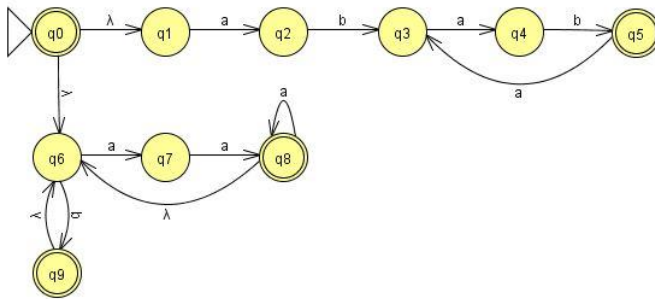
Points possible: 10

Section 3.2 Pg 90, #6(b), #11, #12 (a), #15 (a)

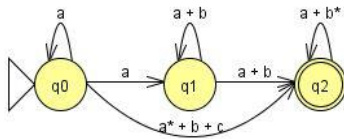
#6(c) (2pts) Find FA for L represented by $((abab)^* + (aaa^* + b)^*)$.

Answer:

NFA:



#11) (2pts) What language is accepted by the following generalized transition graph?

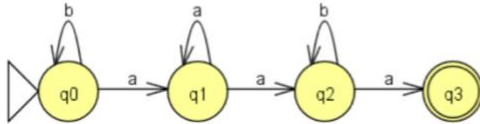


Answer:

$$r = a^*((a(a+b)^*(a+b)) + (a^* + b + c))(a + b^*)^*$$

#12 (a) (3pts)

#12(a) (4pts) Find regular expression for the language accepted by the automata.



Answer:

$$r = b^*aa^*ab^*a$$

#15 (a) (3pts)

#15(a) (4pts) Find a regular expression for the following languages on $\{a, b\}$.

$$L = \{w : n_a(w) \text{ and } n_b(w) \text{ are both odd}\}$$

Answer:

$$r = (aa+bb)^* (ab+ba) ((aa+bb) + (ab+ba)(aa+bb)^*(ab+ba))^*$$