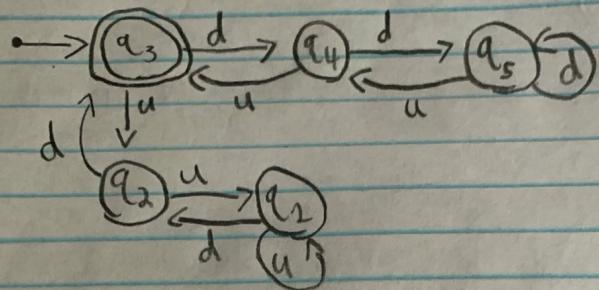
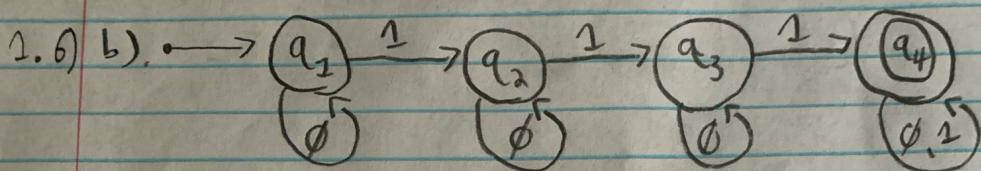


Homework 1 due 9/10

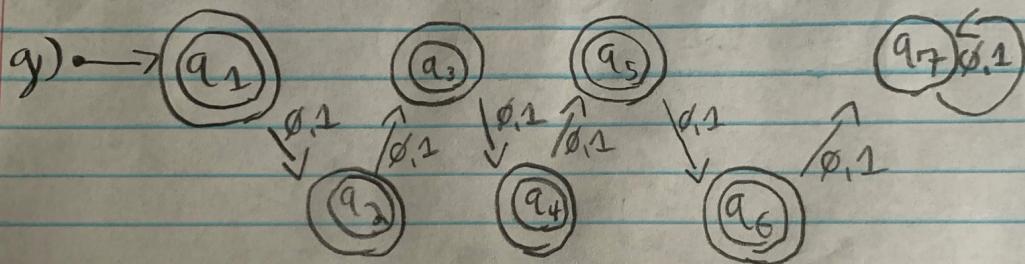
1.3)



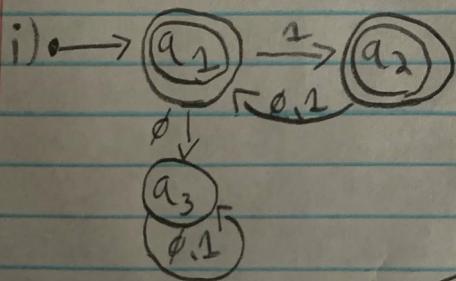
1.6) b)



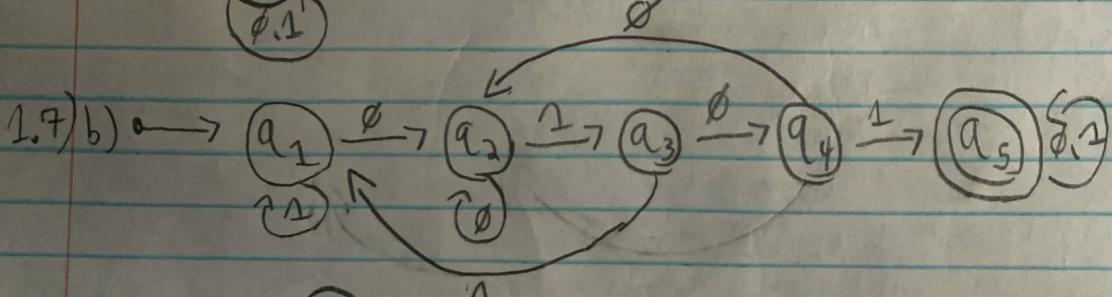
c)



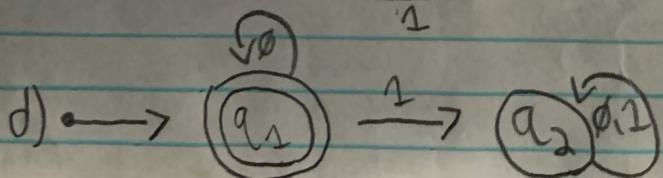
i)

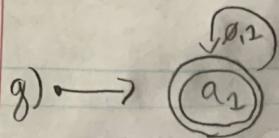


1.7) b)

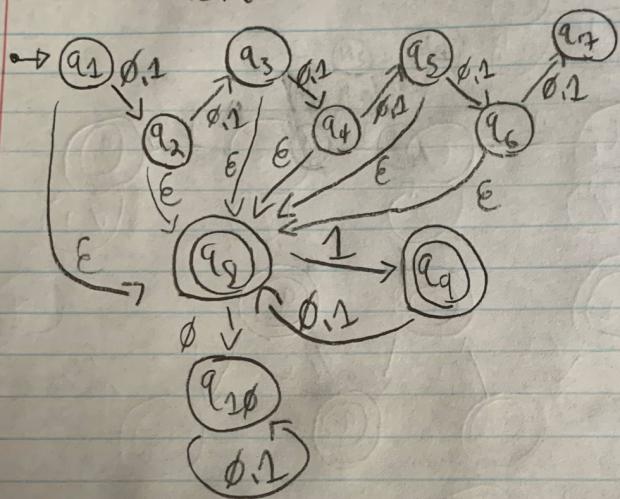


d)





1.9(a)  $Q = \{q_1, q_2, q_3, q_4, q_5, q_6, q_7, q_{12}, q_{13}\}$   
 $q_\phi = q_{12}$   
 $F = \{q_{12}, q_{13}\}$



e)  $b^* 1^* 1^* 1^* 1^* \$$

g)  $1^* \$$

i)  $1^* (0,1)^* \$$

1.2(f) b) Pass: abb

abab

f) Pass: abaab

Abbab

h) Pass: aab

abbabbab

Fail: bab

aaa

Fail: a

b

Fail: aaa

ababbababbabbbaab

$$1.29) \text{ a) } A_1 = \{\emptyset^n 1^n 2^n \mid n \geq 0\}$$

$$1) S = \emptyset^n 1^n 2^n = xyz$$

$$|xyz| \leq n \text{ so } x = \emptyset, y = \emptyset$$

$$\cancel{y \neq \emptyset} \text{ so } |y| > 0$$

$$2) x = \emptyset^a \quad |a+b \leq n \text{ (rule 3)}$$

$$y = 1^b \quad b \geq 1 \text{ (rule 2)}$$

$$z = 2^c$$

$$a+b+c = n$$

$$3) \text{ But if } i = \emptyset$$

$$\emptyset^a 1^b 2^c$$

I have no idea what I'm doing