Week 9

Thursday, April 25, 2019 8:00 AM

从后倒过来解释为2进制数时被5整除的串的集合

h是{0,1,2}到{a,b}同态，h(0)=a，h(1)=ab，h(2)=ba

① h(0120)= aabbaa

② 如果L是语言L(01*2)，h(L)=a(ab)*ba

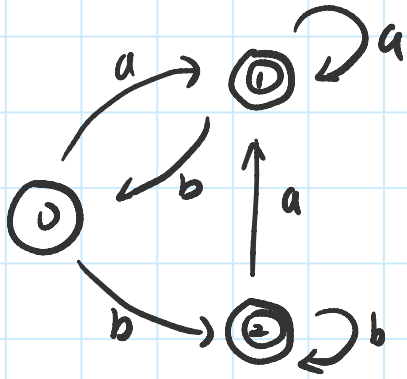
③ L={ababa}，$h^{-1}(L)$={110, 102, 022}

$$\underbrace{a}_{}\ \underbrace{b}_{1}\ \underbrace{a}_{}\ \underbrace{b}_{1}\ \underbrace{a}_{0}$$

$$\underbrace{a}_{0}\ \underbrace{b}_{}\ \underbrace{a}_{2}\ \underbrace{b}_{}\ \underbrace{a}_{2}$$

自测题

	0	1
→ q_0	$\gamma(q_0,0)=\delta'(q_0,ab)=q_0$	$\gamma(q_0,1)=\delta'(q_0,ba)=q_1$
q_1	$\gamma(q_1,0)=\delta(q_1,ab)=q_0$	$\gamma(q_1,1)=\delta'(q_1,ba)=q_1$
q_2	$\gamma(q_2,0)=\delta'(q_2,ab)=q_0$	$\gamma(q_2,1)=\delta'(q_2,ba)=q_1$



1. 考虑任意 $n\geq 1$，取 $w=0^n1^n$

   任意 x,y,z 使 $w=xyz$ 且 $y\neq\varepsilon$ 且 $|xy|\leq n$

   若 $k=0$，则有 $xy^kz=xz\notin L$（0的个数不是1的两倍）

2. $w=1^n0^{n+1}$，$w=xyz$ 且 $y\neq\varepsilon$ 且 $|xy|\leq n$

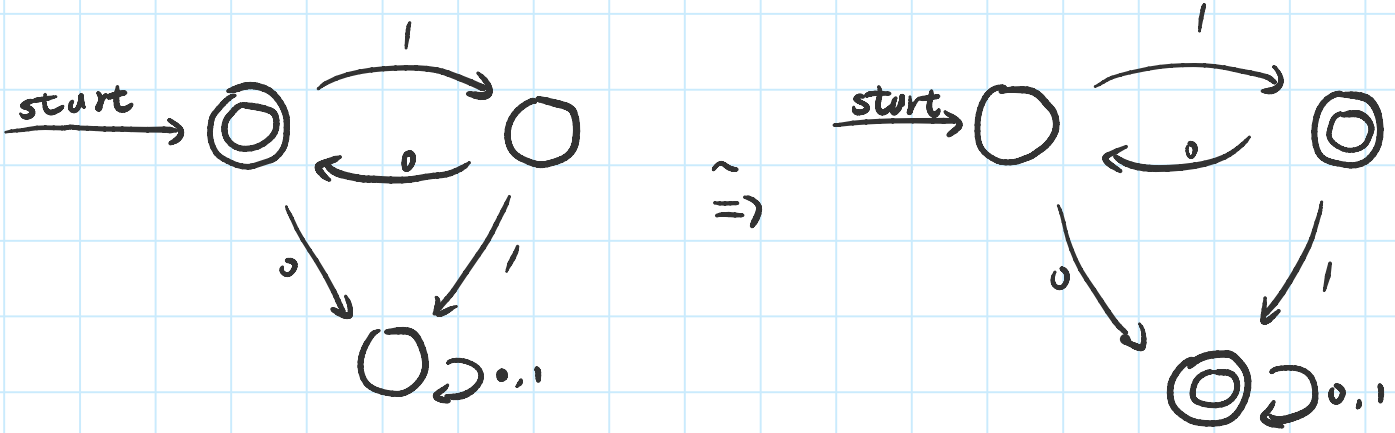
   $k=2$ $xy^kz\notin L$

3. 1) $E=\varepsilon+(a+b)(ba)^*$

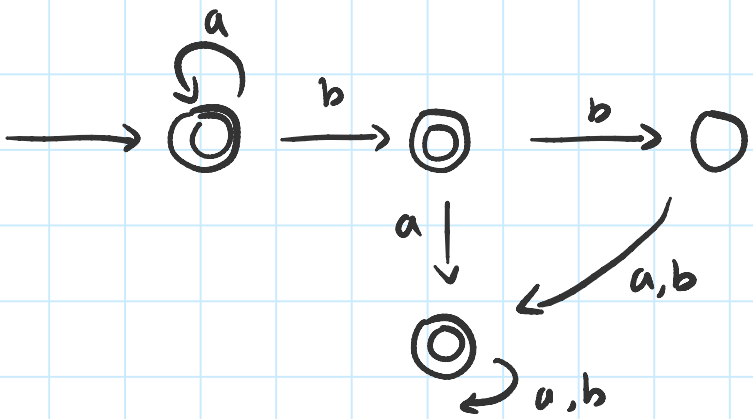
   $\Rightarrow E^R=\varepsilon+(ab)^*(a+b)$

2) $h(E) = \varepsilon + (\varepsilon + 10)(10)^* = (10)^*$

3)

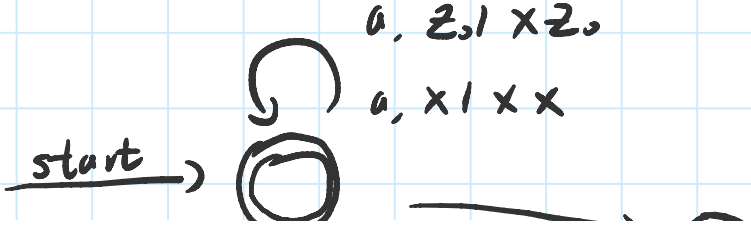


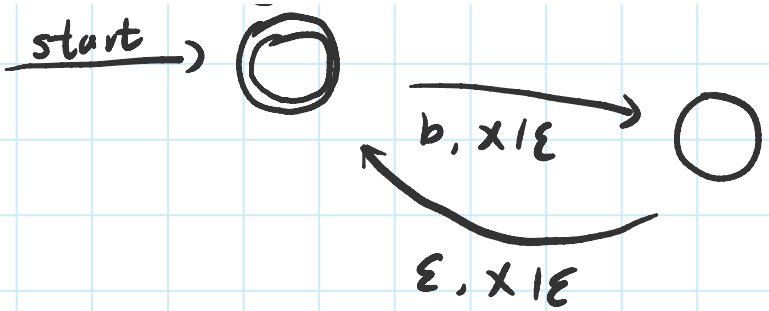
6.



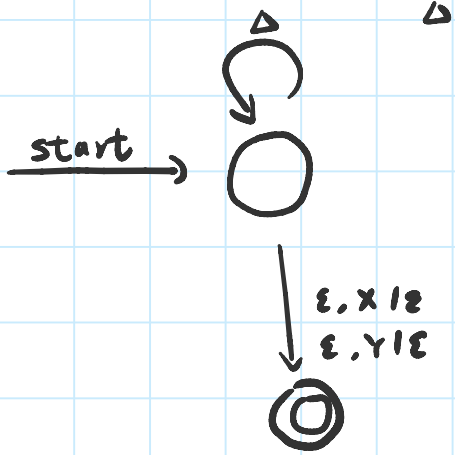
自测题

1)





2)



$\Delta = \{(a, Z_0, X) Z_0)$
$(a, X, X) XX)$
$(b, Z_0, Y) Z_0)$
$(b, Y, Y) YY)$
(a, Y, ε)
$(b, X, \varepsilon)\}$

3)