

$$L_2 = a^{2^k} \quad k \in \mathbb{N}$$

$$\{ \underbrace{a^{2^0}, a^{2^1}, a^{2^2}, \dots, a^{2^k}}_{k \in \mathbb{N}} \}$$

$$L_2 a^{2^{k_1}} \neq L_2 a^{2^{k_2}} \quad k_1 \neq k_2$$

$$\boxed{a^{2^{k_1}}}$$

$$a^{2^{k_1}} a^{2^{k_1}} \Rightarrow a^{2^{(k_1+1)}} \quad \forall \in L_2 a^{2^{k_1}}$$

$$a^{2^{k_1}} a^{2^{k_2}} \Rightarrow a^{\boxed{2^{k_1} + 2^{k_2}}} \neq 2?$$

$$2^{k_1} + 2^{k_2} = 2^m$$

$$k_2 > k_1$$

$$k_2 = k_1 + n$$

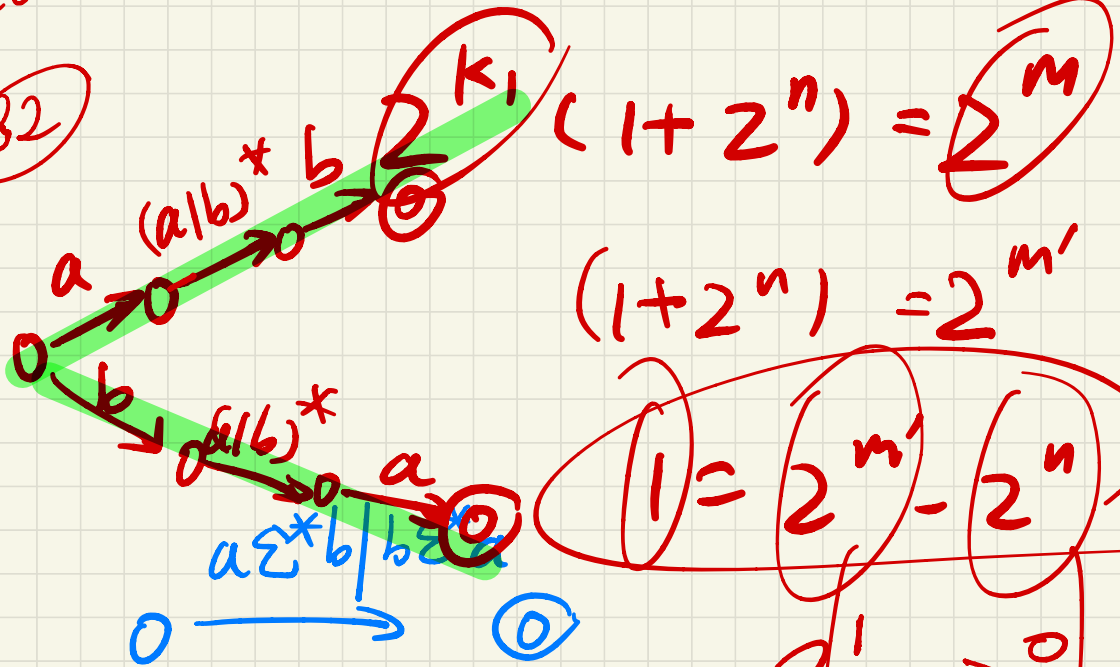
②

4

8

16

③



$$(1 + 2^n) = 2^m$$

$$(1 + 2^n) = 2^{m'}$$

$$1 = 2^{m'} - 2^n$$

$$2^1 = 2^0$$

$w \in \Sigma^*$

$(w|ab \neq |w|ba$

$a \Sigma^* b$

$\rightarrow 0$

$(a^+) \rightarrow a^+ a^+$

$w|a$ 开头

$a^+ b^+ a^+ b^+ a^+$ $\rightarrow w|a$ 结尾

$ab = 2$
 $ba = 2$

$a^+ b^+ a^+ b^+$

$b \Sigma^* a$

1

$\rightarrow w|b$ 结尾

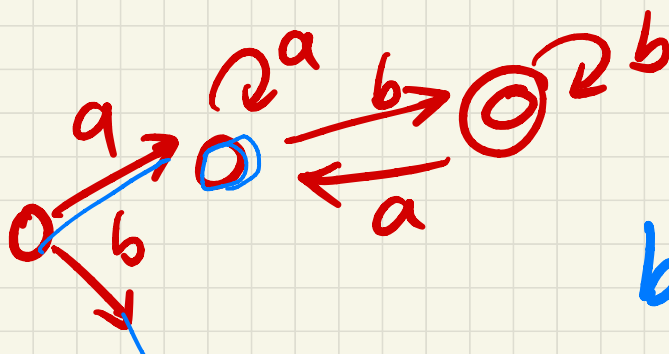
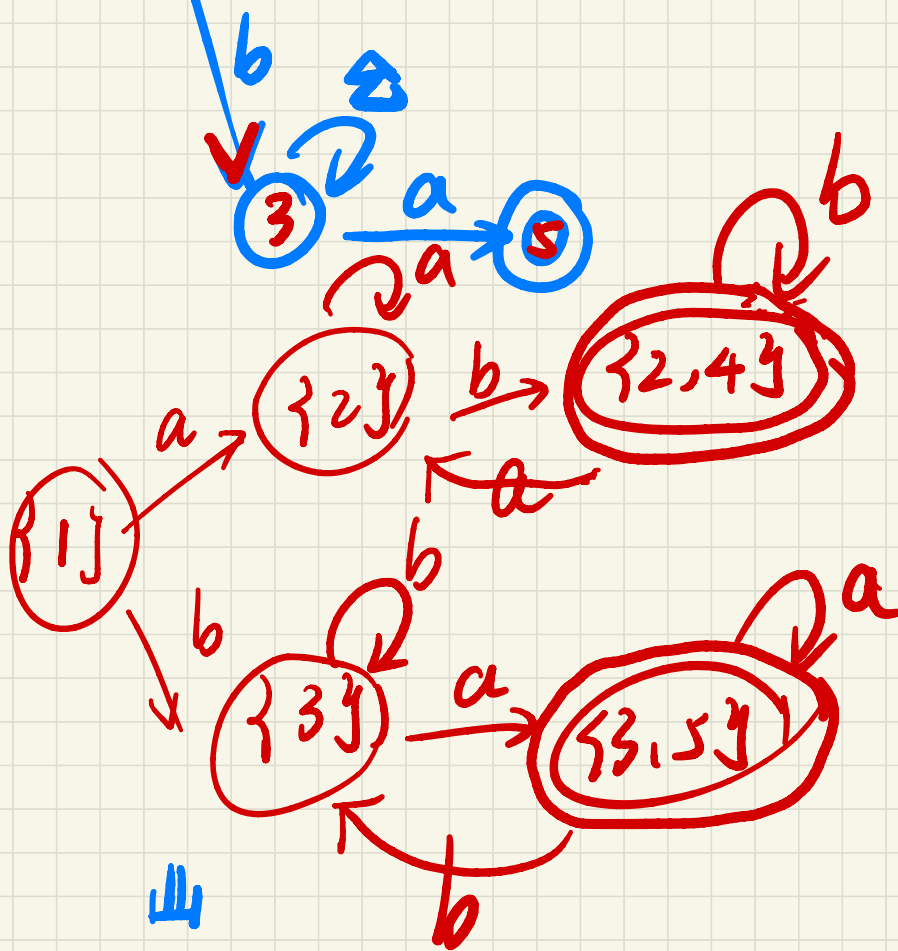
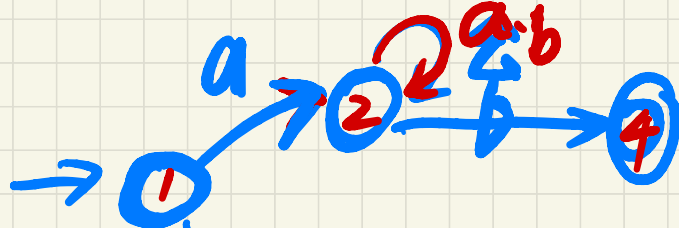
ab ba

$w \rightarrow \underline{a \text{ 开头 } b \text{ 结尾}} \quad |w|ab = |w|ba + 1$

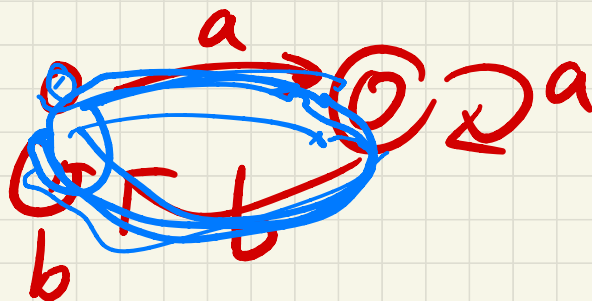
$\rightarrow b \text{ 开头 } a \text{ 结尾} \quad |w|ba = |w|ab + 1$

\hookrightarrow

(w)

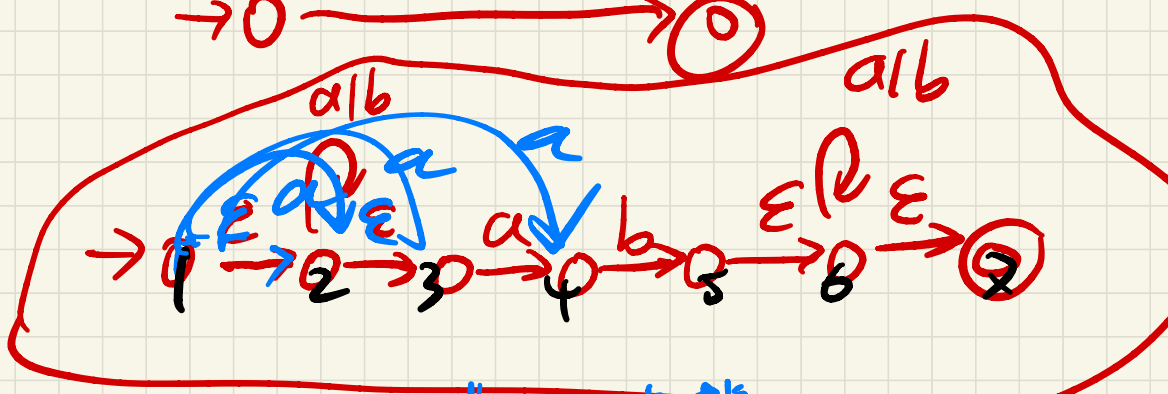


aaab
 bababba



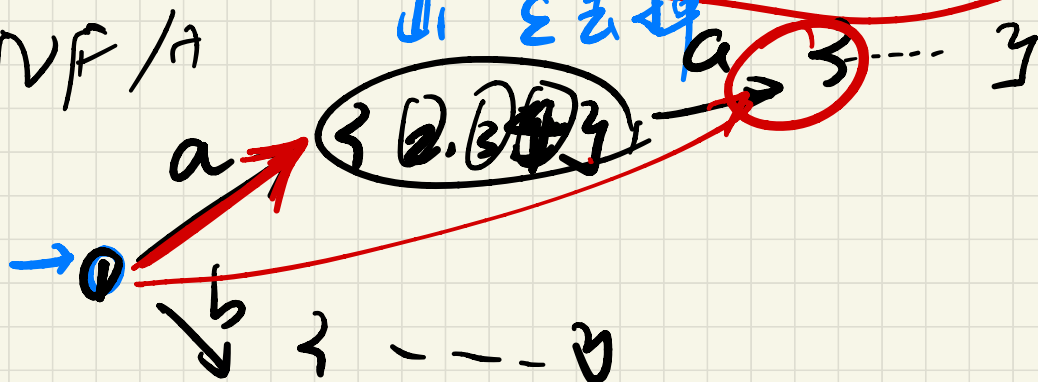
$$\Sigma^* a b \Sigma^*$$

$$\rightarrow 0 \xrightarrow{(a|b)^* a b (a|b)^*} 1$$



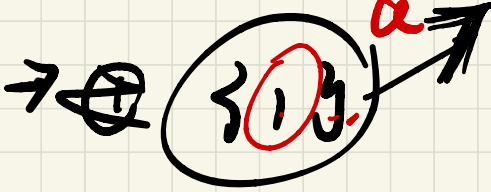
NF/A

↓ ε 去掉



↓ DFA

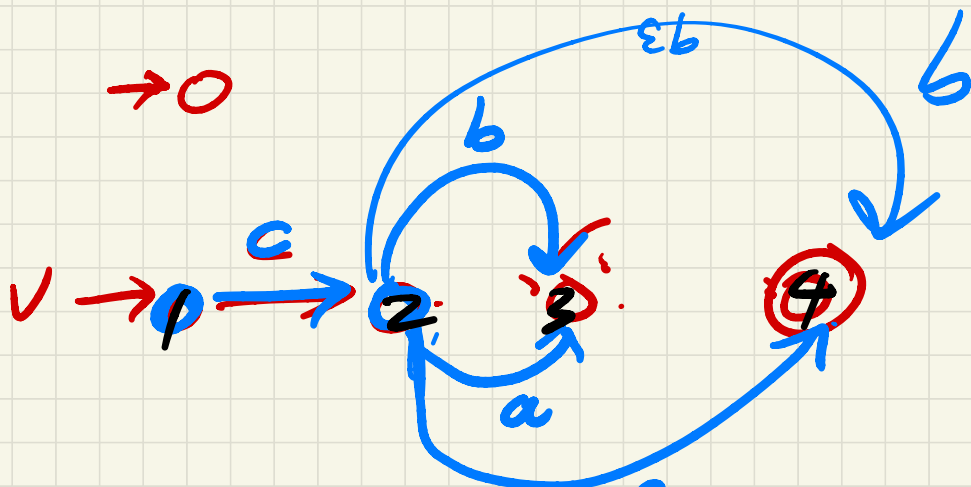
$\{ \dots \}$



L2.

$C(a|b)^*$

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



✓ DFA

