练习题

- 1. 设计正规式，接受除以4余3的八进制数

- 2. (a|b)*aab(a|b)*

① 表示什么语言

② 构造NFA

③ 构造DFA

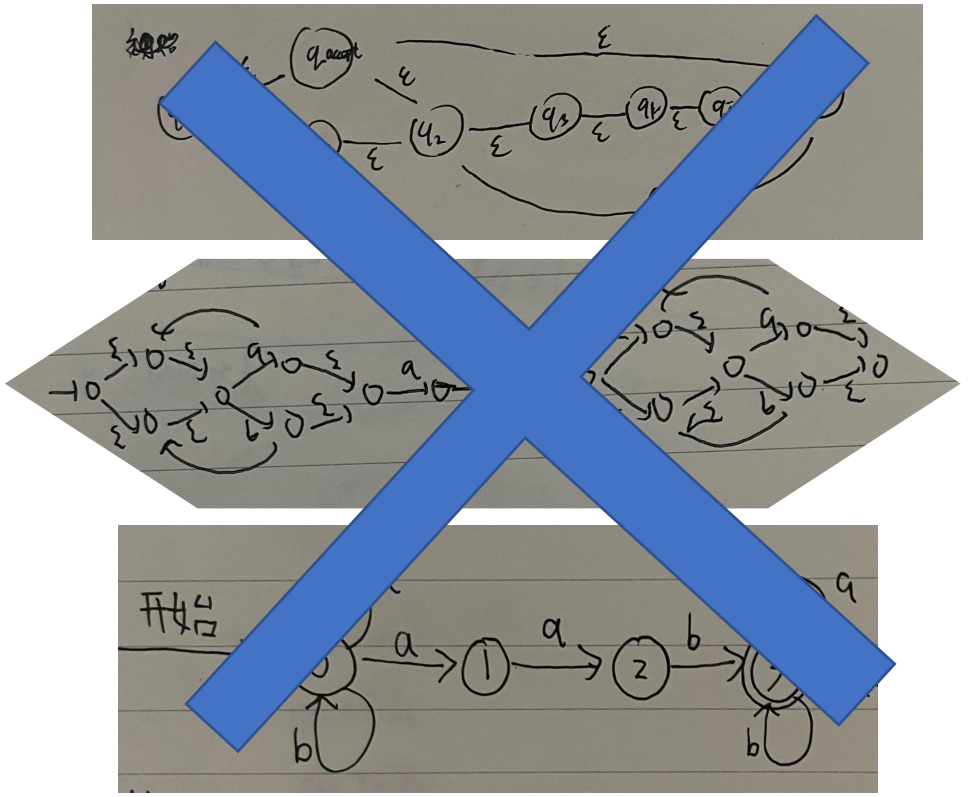
④ 优化DFA

练习题

- 1. 设计正规式，接受除以4余3的八进制数
- [1-7][0-7]*(3|7)|3|7
- 4n+3

八进制	十进制
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
10	8
11	9
12	10
13	11
14	12
15	13
16	14
17	15

练习题

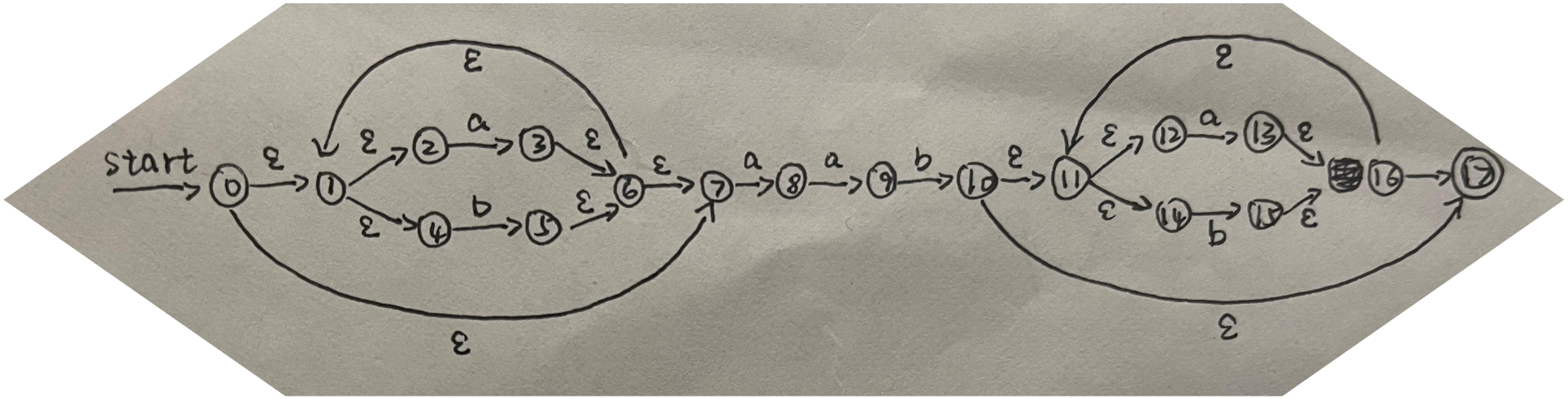


- 2. (a|b)*aab(a|b)*

a. 表示什么语言

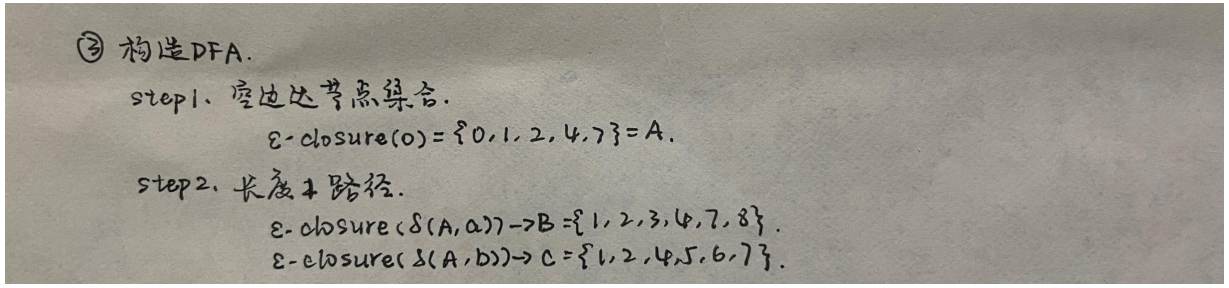
包含aab的所有ab串

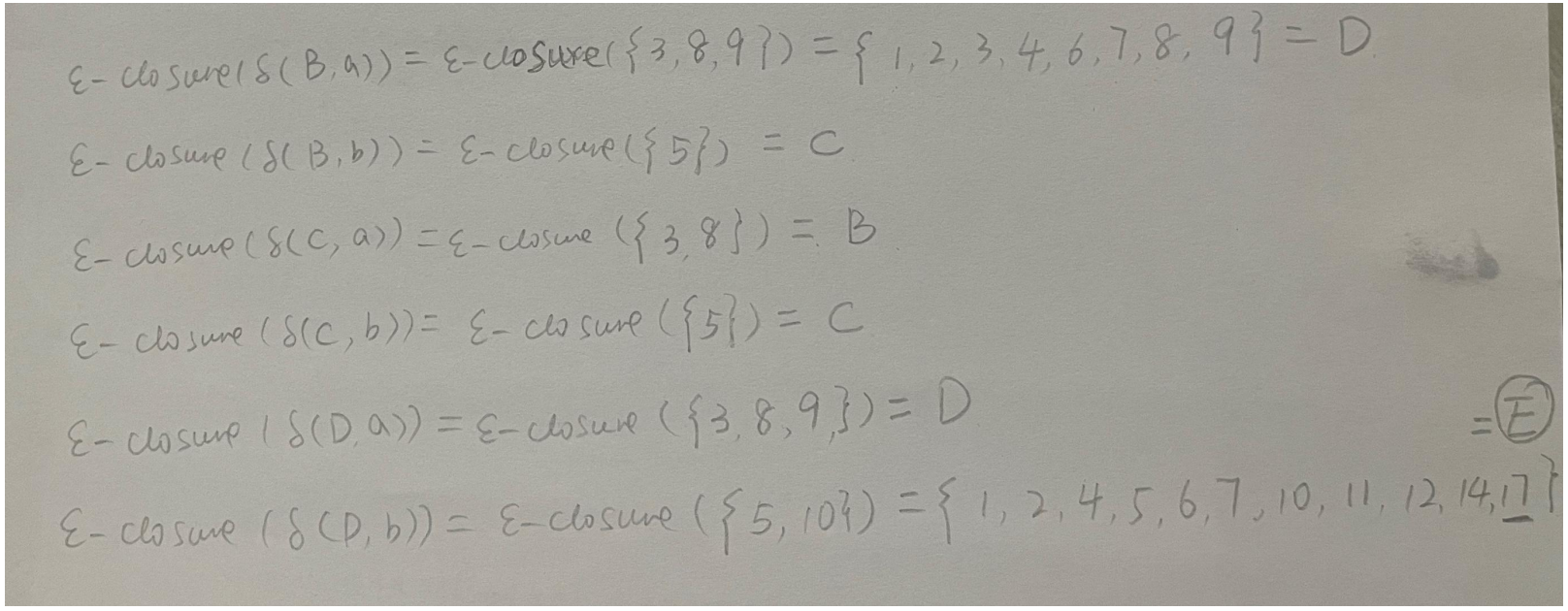
b. 构造NFA



练习题

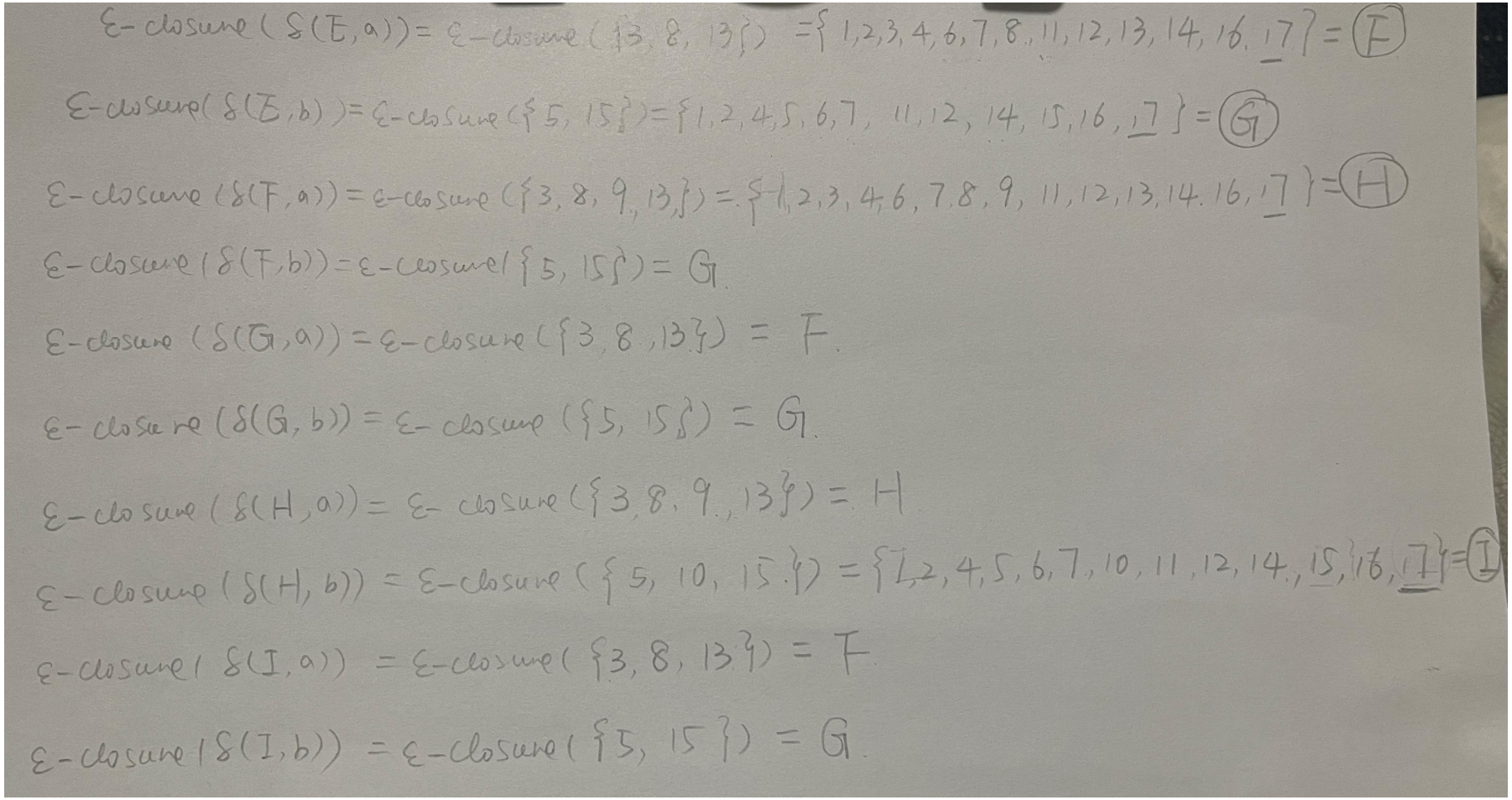
c. 构造DFA


③ 构造DFA.
step1. 空边达节点集合.
ε-closure(0) = {0,1,2,4,7} = A.
step2. 长度+路径.
ε-closure(δ(A,a))→B = {1,2,3,4,7,8}.
ε-closure(δ(A,b))→C = {1,2,4,5,6,7}.


ε-closure(δ(B,a)) = ε-closure({3,8,9}) = {1,2,3,4,6,7,8,9} = D
ε-closure(δ(B,b)) = ε-closure({5}) = C
ε-closure(δ(C,a)) = ε-closure({3,8}) = B
ε-closure(δ(C,b)) = ε-closure({5}) = C
ε-closure(δ(D,a)) = ε-closure({3,8,9,}) = D
ε-closure(δ(D,b)) = ε-closure({5,10}) = {1,2,4,5,6,7,10,11,12,14,17}
=E

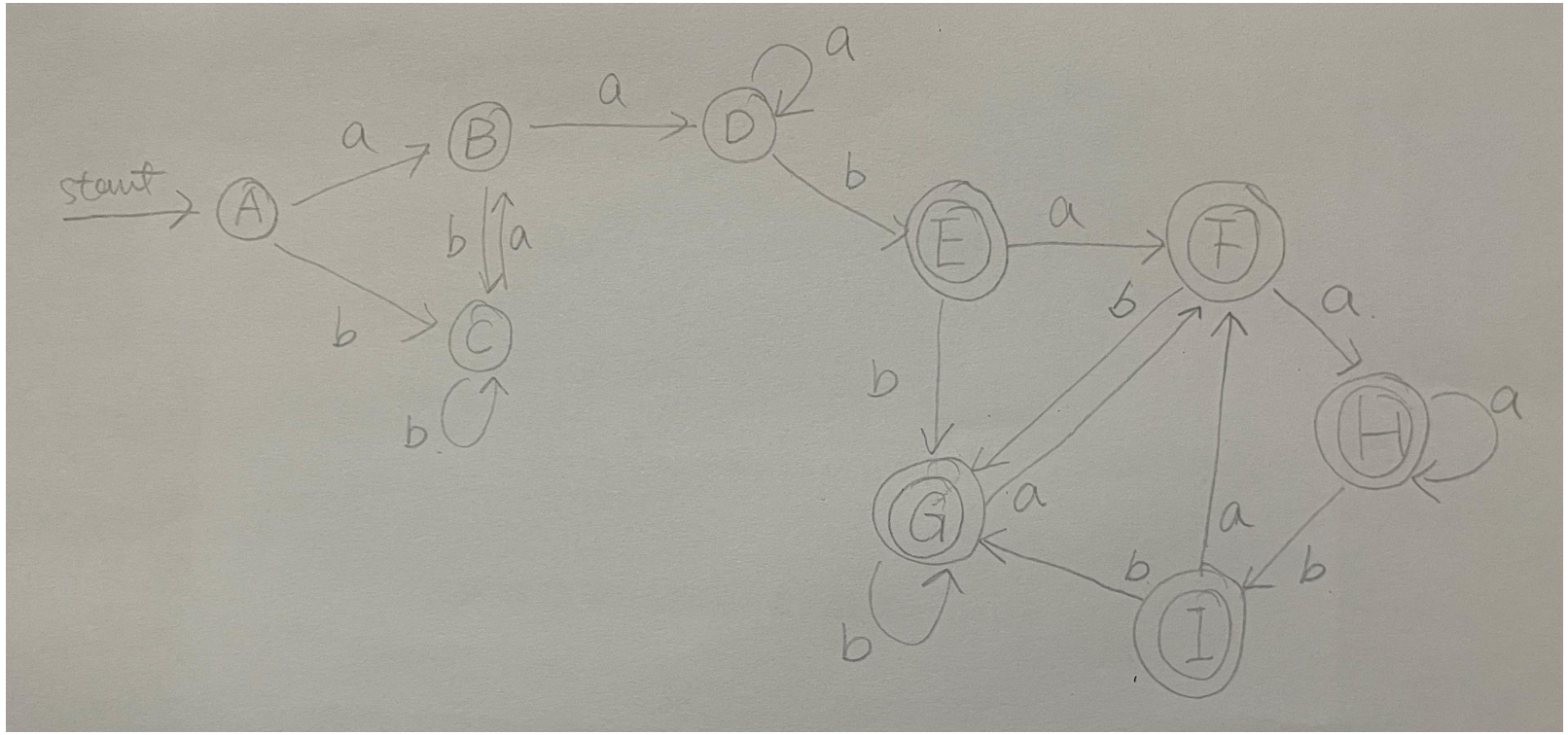
练习题

c. 构造DFA


ε-closure(δ(E,a)) = ε-closure({3,8,13}) = {1,2,3,4,6,7,8,11,12,13,14,16,17} = F
ε-closure(δ(E,b)) = ε-closure({5,15}) = {1,2,4,5,6,7,11,12,14,15,16,17} = G
ε-closure(δ(F,a)) = ε-closure({3,8,9,13}) = {1,2,3,4,6,7,8,9,11,12,13,14,16,17} = H
ε-closure(δ(F,b)) = ε-closure({5,15}) = G
ε-closure(δ(G,a)) = ε-closure({3,8,13}) = F
ε-closure(δ(G,b)) = ε-closure({5,15}) = G
ε-closure(δ(H,a)) = ε-closure({3,8,9,13}) = H
ε-closure(δ(H,b)) = ε-closure({5,10,15}) = {1,2,4,5,6,7,10,11,12,14,15,16,17} = I
ε-closure(δ(I,a)) = ε-closure({3,8,13}) = F
ε-closure(δ(I,b)) = ε-closure({5,15}) = G

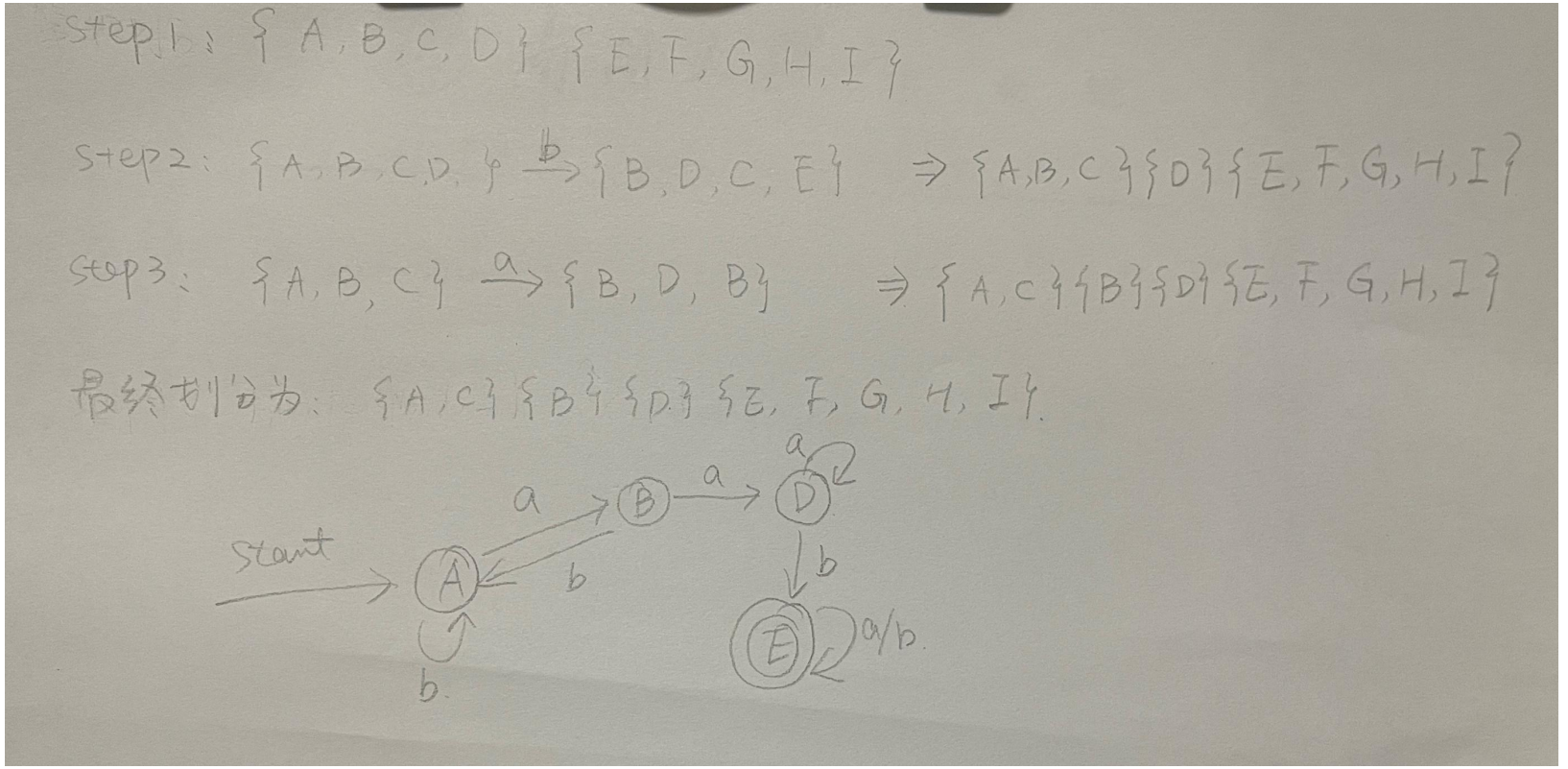
练习题

c. 构造DFA



练习题

d. 优化DFA


step1: {A, B, C, D} {E, F, G, H, I}
step2: {A, B, C, D} b→ {B, D, C, E} ⇒ {A, B, C}{D}{E, F, G, H, I}
step3: {A, B, C} a→ {B, D, B} ⇒ {A, C}{B}{D}{E, F, G, H, I}
最终划分为: {A, C}{B}{D}{E, F, G, H, I}
start
A
B
D
E
a
b
a/b