BackTracking HARD :-

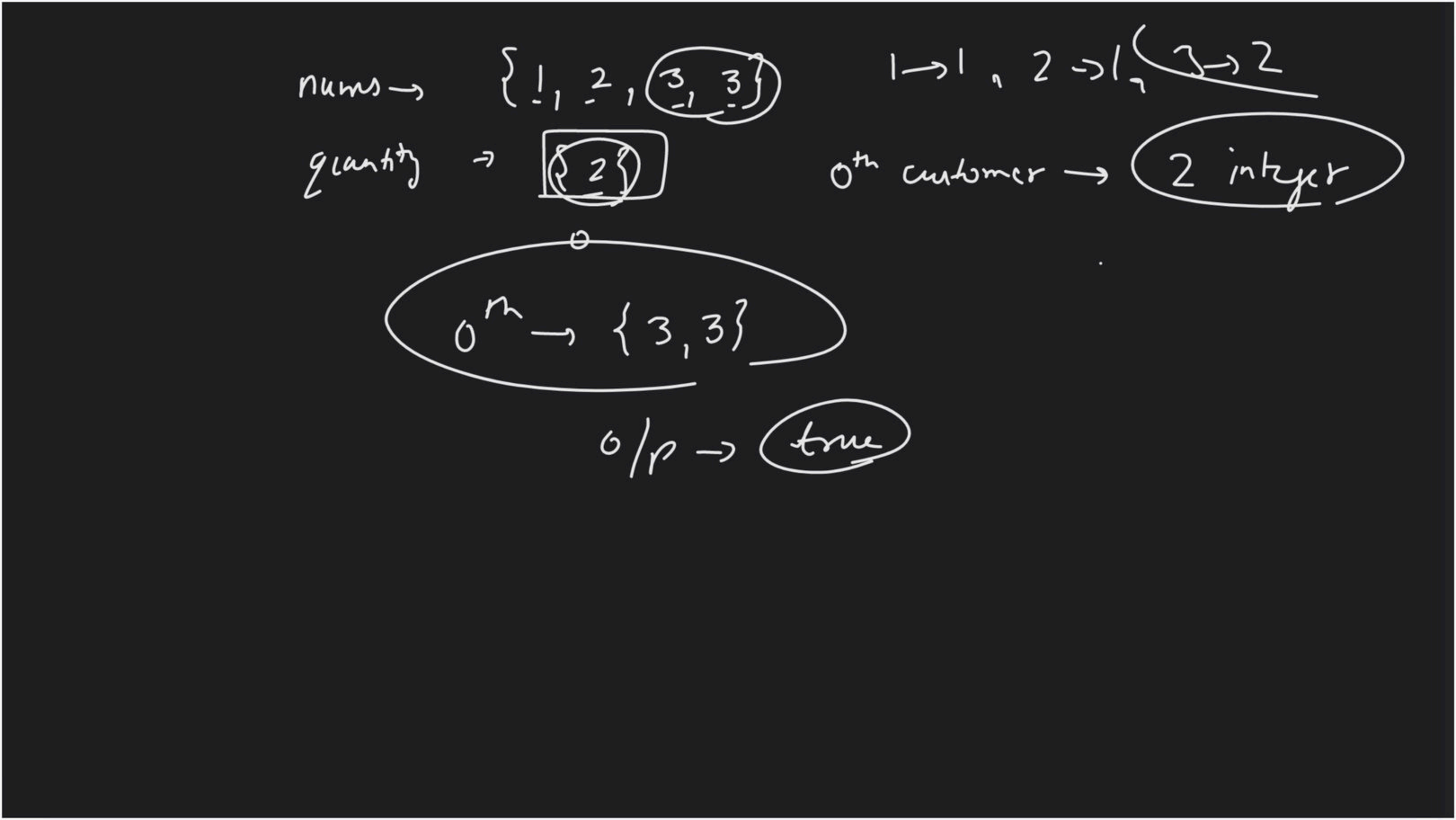
① Distribute Repeating Integers :-

i/p → nums → {1, 2, 3, 4}

quantity → {2}

0th customer → 2 integers choosing same

o/p → false


nums → {1, 2, 3, 3}
1 → 1 , 2 → 1 , 3 → 2
quantity → {2}
0th customer → 2 integer
0^m → {3, 3}
o/p → true

→ nums → {1, 1, 2, 2}

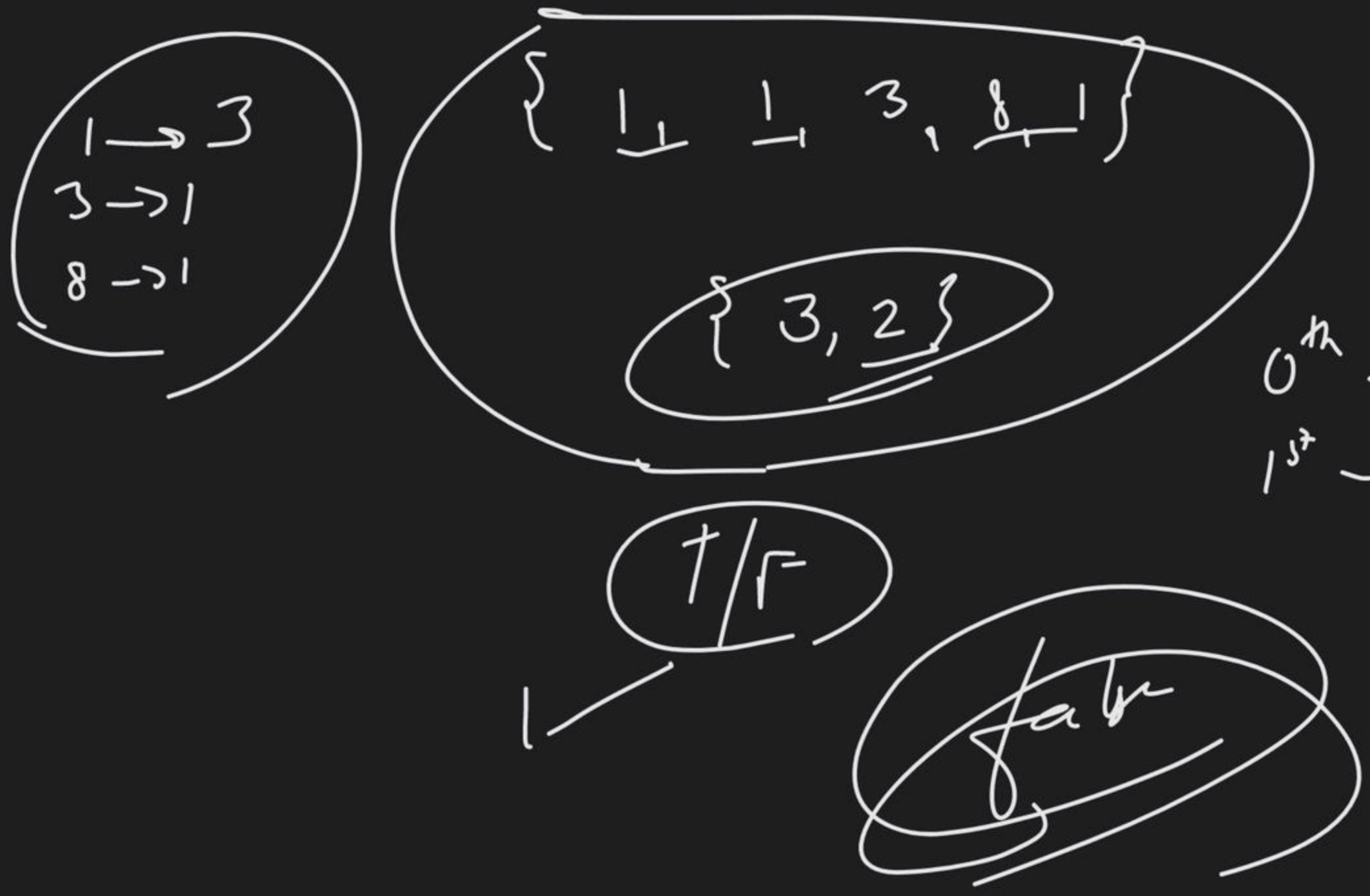
1 → 2
2 → 2

quantity → {2, 2} → 0th cnt → 2 int
0 1 1st cnt → 2 int

0th cnt → {1, 1}

1st cnt → {2, 2}

o/p → (true)



result

0th → 3 in → { 1, 1, 1 }

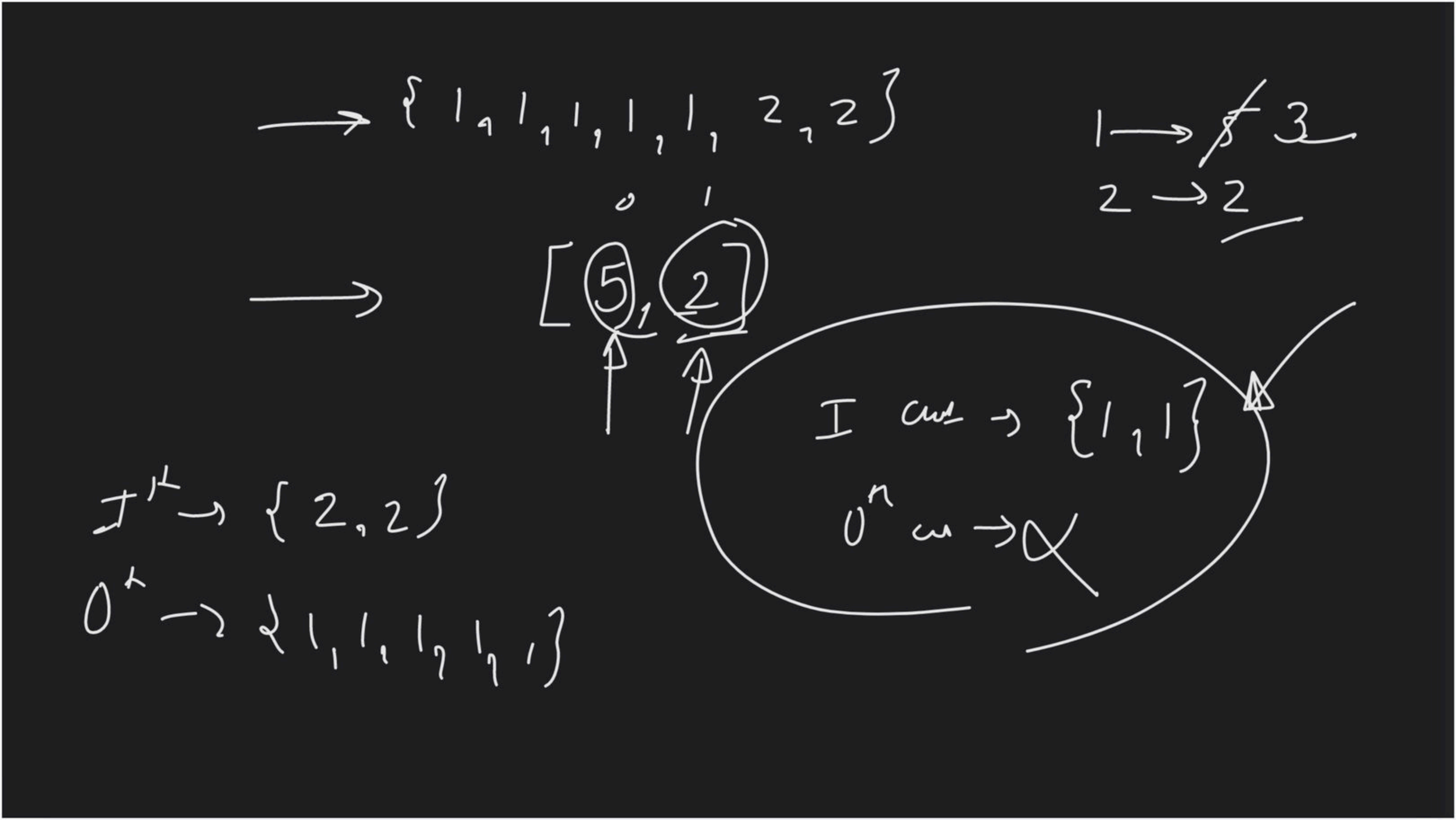
1st → 2 in → { ___ }

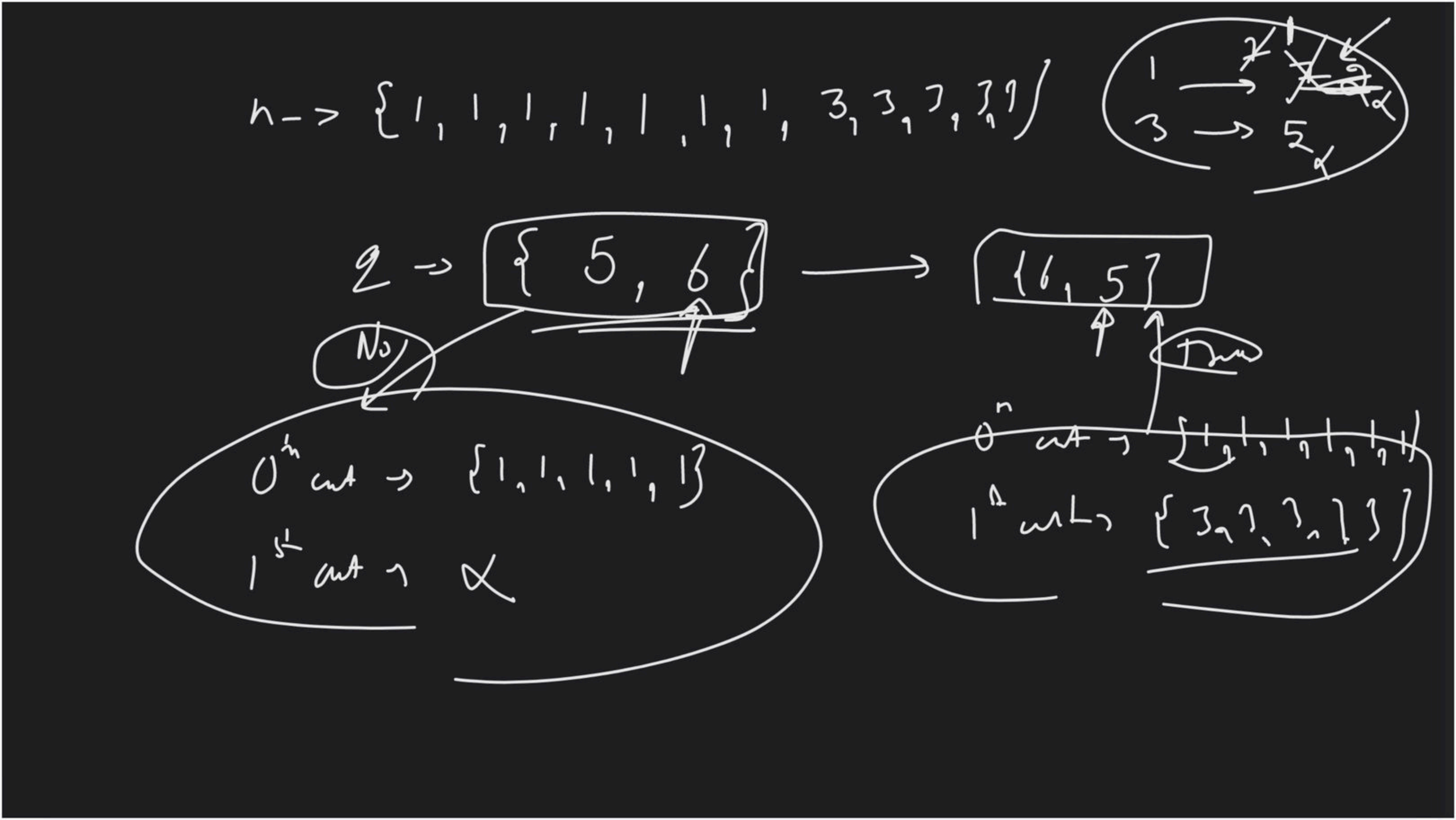
∝

approach - ?

(I) count freq of elements in nums

(2) sort quantity (desc)


{1, 1, 1, 1, 1, 2, 2}
1 → 3
2 → 2
0 1
[5, 2]
I cur → {1, 1}
0^n cur →
1^k → {2, 2}
0^ → {1, 1, 1, 1, }



$n \to \{1, 1, 1, 1, 1, 1, 1, 3, 3, 3, 3, 3\}$

$1 \to \cancel{7}\ \cancel{1}\ \cancel{2}\ \alpha$

$3 \to 5\ \alpha$

$2 \to \boxed{\{5, 6\}} \longrightarrow \boxed{\{6, 5\}}$

No

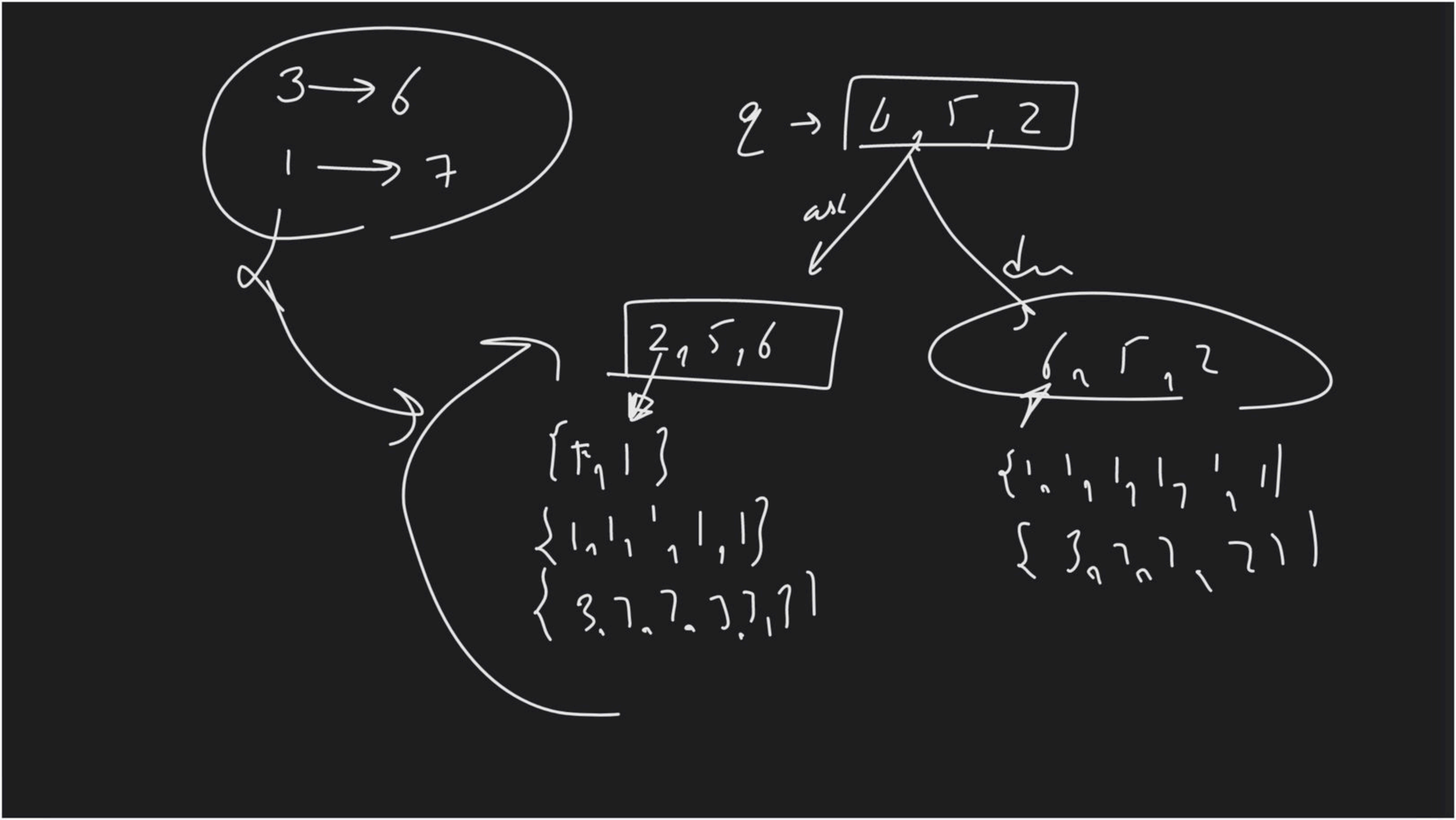
0th cut $\to \{1, 1, 1, 1, 1\}$

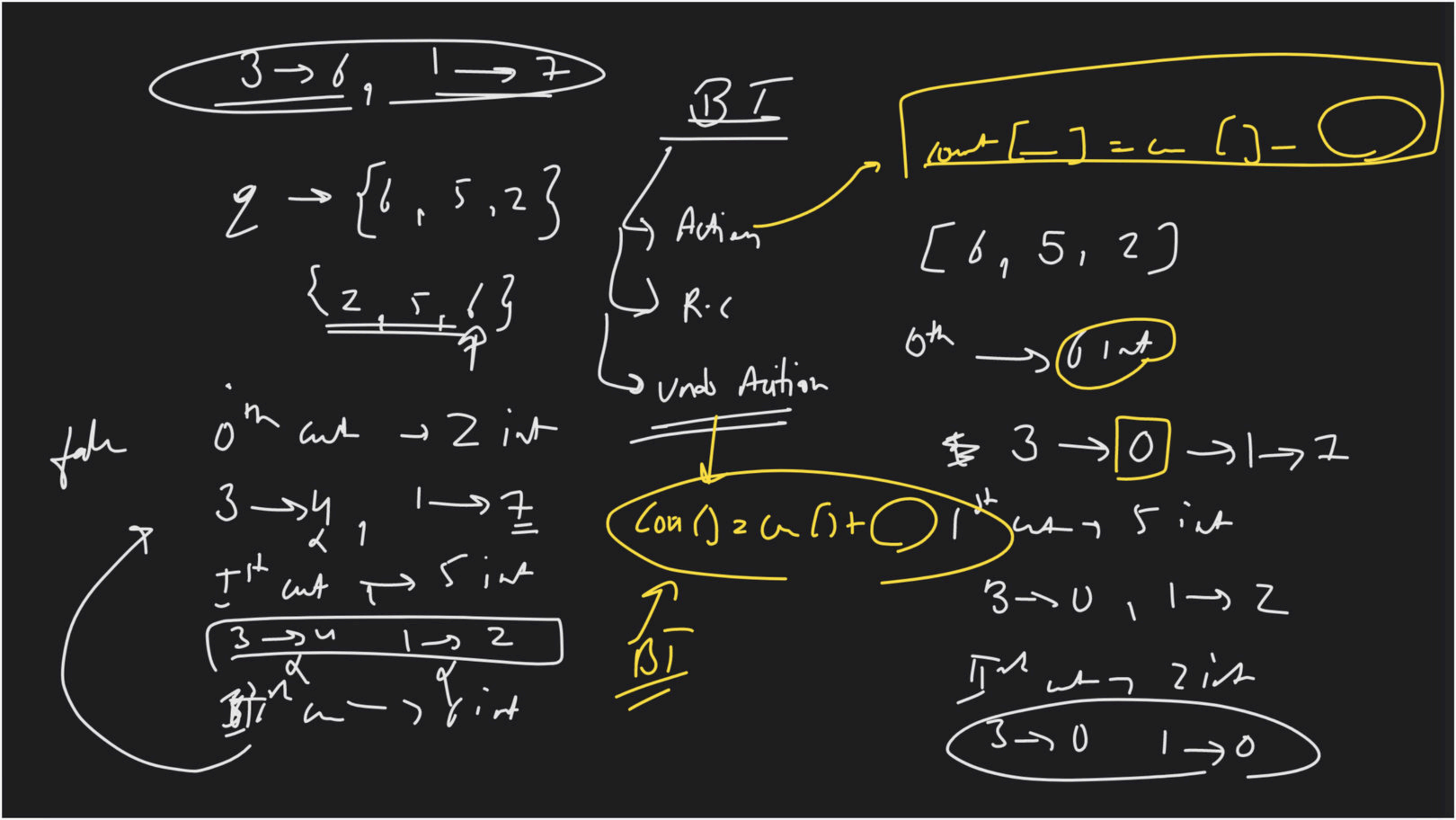
1st cut $\to \alpha$

Done

0^{n} cut $\to \{1, 1, 1, 1, 1, 1\}$

1st cut $\to \{3, 3, 3, 3, 3\}$


3 → 6
1 → 7
asc
dsc



$3 \to 6, \quad 1 \to 7$

$q \to \{6, 5, 2\}$

$\{2, 5, 6\}$

fake

0th cut $\to$ 2 int

$3 \to 4, \quad 1 \to 7$

1st cut $\to$ 5 int

$\boxed{3 \to 4 \quad 1 \to 2}$

2nd cut $\to$ 6 int

BT

- Action
- R.C
- Undo Action

$\text{cout}[\_] = \text{cu}[\,] - \bigcirc$

$[6, 5, 2]$

$0^{th} \to 6$ int

$3 \to \boxed{0} \to 1 \to 7$

1st cut $\to$ 5 int

$3 \to 0, \quad 1 \to 2$

IInd cut $\to$ 2 int

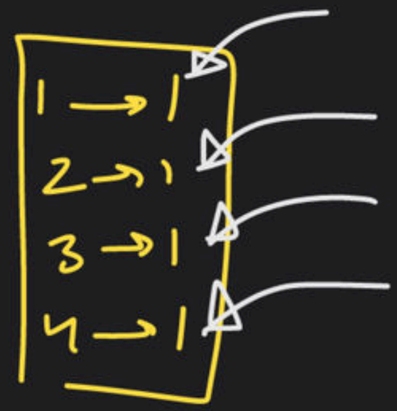
$3 \to 0 \quad 1 \to 0$

$\text{cou}[\,] = \text{cu}[\,] + \bigcirc$

BT

n -> {1, 2, 3, 4}

s → {2}

① 

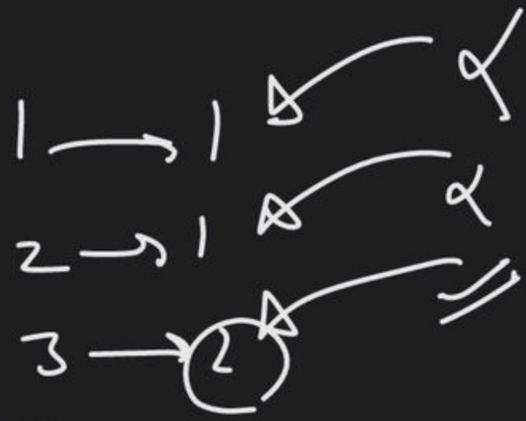
② {2}

— — —

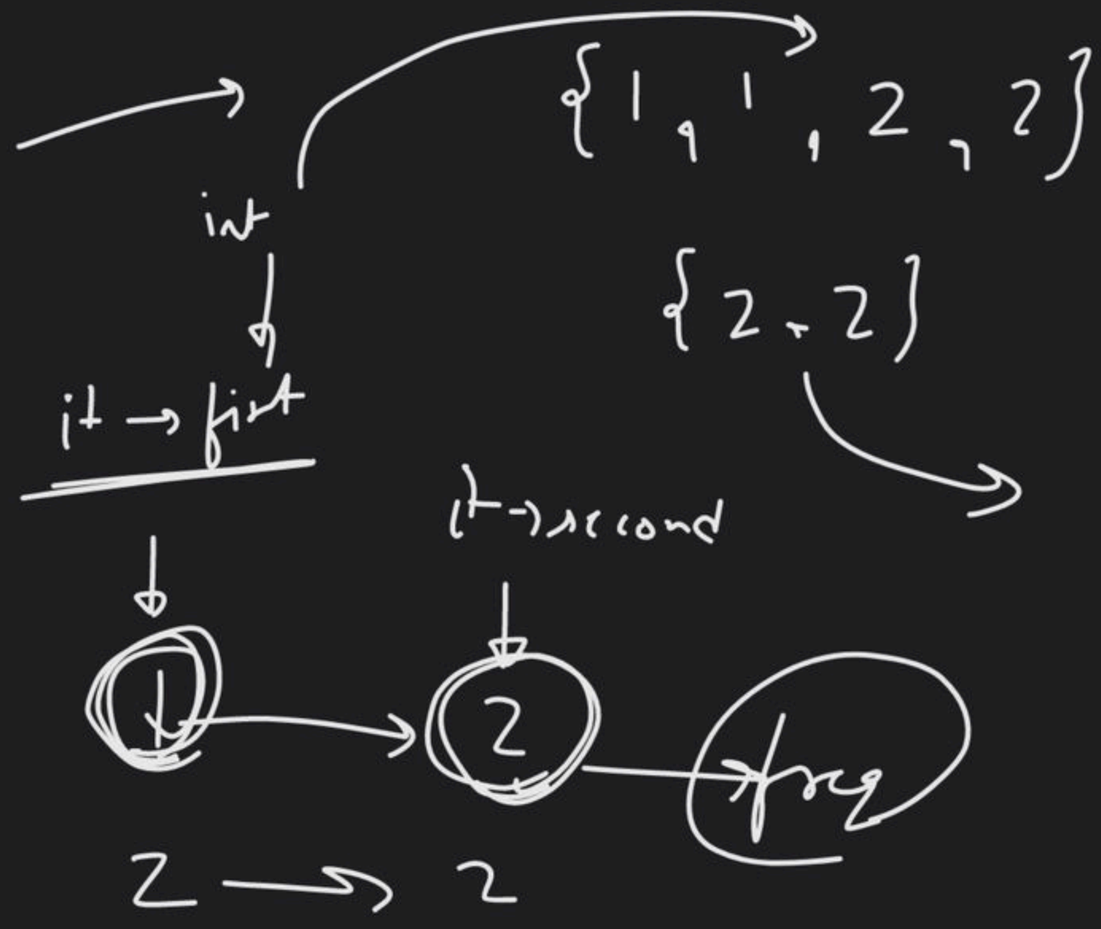
→ h → {1, 2, 3, 3}

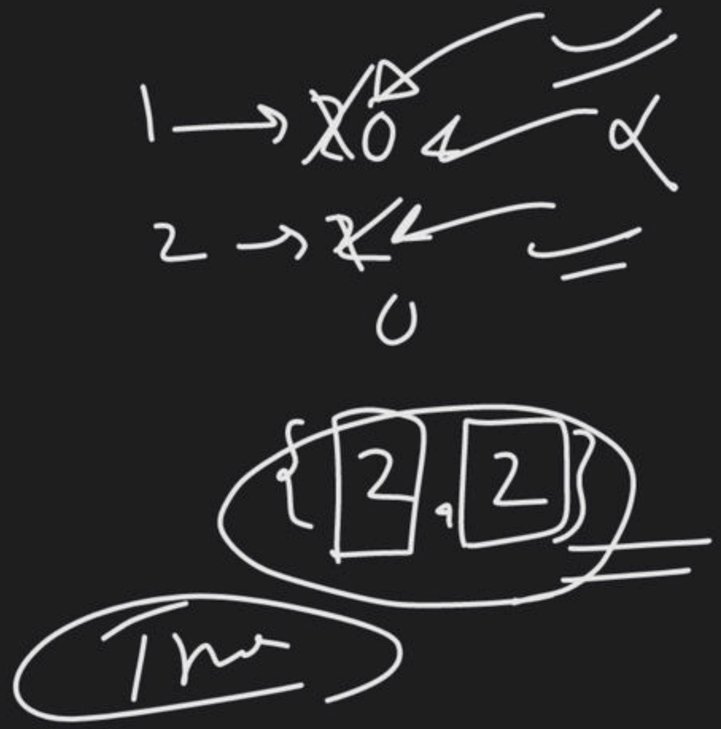
s → {2}

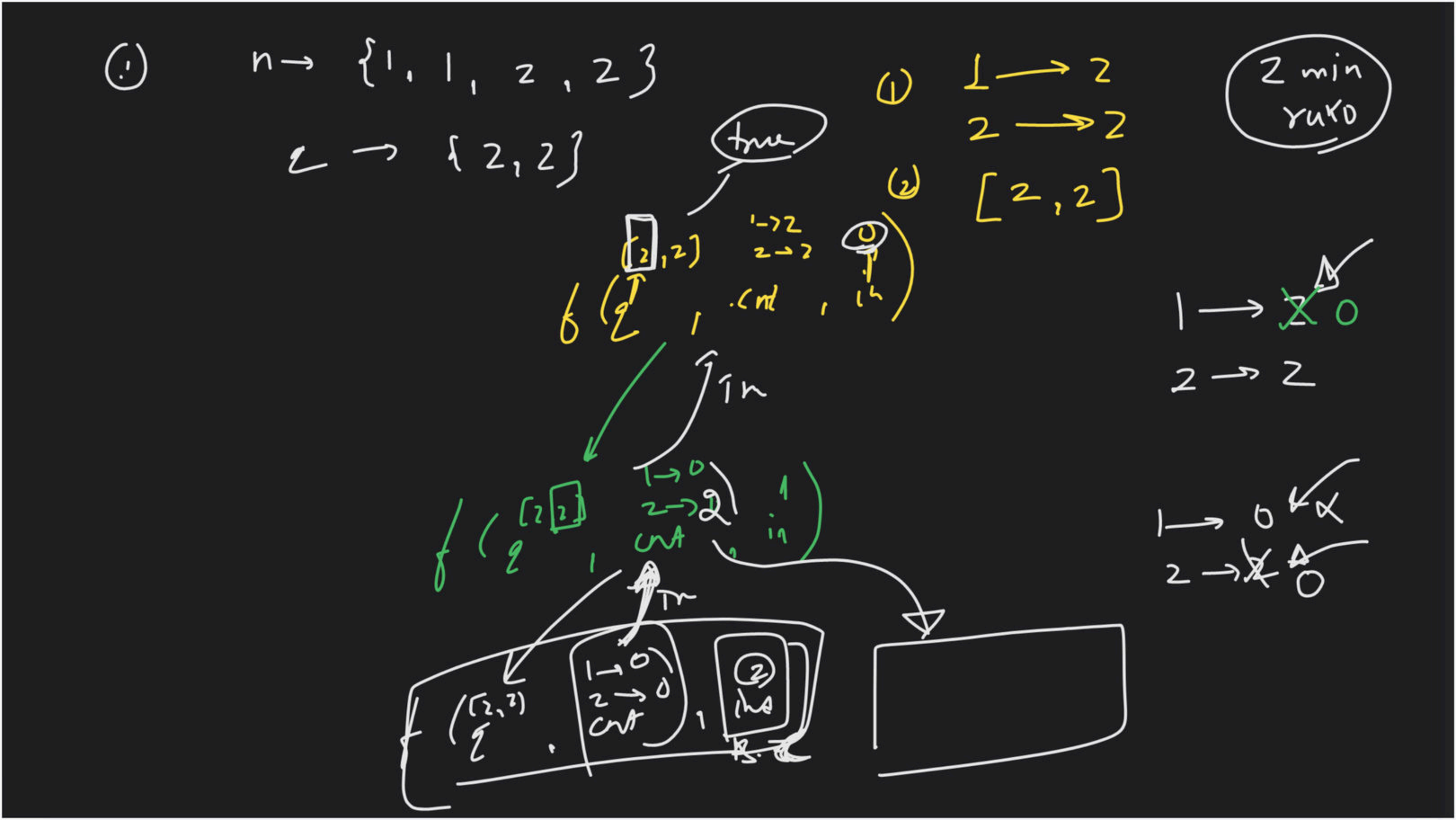
True

① 

s → {2}


{1, 1, 2, 2}
int
{2, 2}
it → first
it → second
1
2
frq
2 → 2


1 → 0
2 → 2
0
{2, 2}
Thm



(1) $n \to \{1, 1, 2, 2\}$

$q \to \{2, 2\}$

(1) $1 \to 2$

$2 \to 2$

(2) $[2, 2]$

2 min ruko

true

$[2, 2]$ $1 \to 2$, $2 \to 2$, 0

$f(q, \text{cnt}, \text{in})$

$1 \to \cancel{2}\ 0$

$2 \to 2$

Tn

$f(q^{[2\ \boxed{2}]}, \text{cnt}, \text{in})$ $1 \to 0$, $2 \to 2$, 1

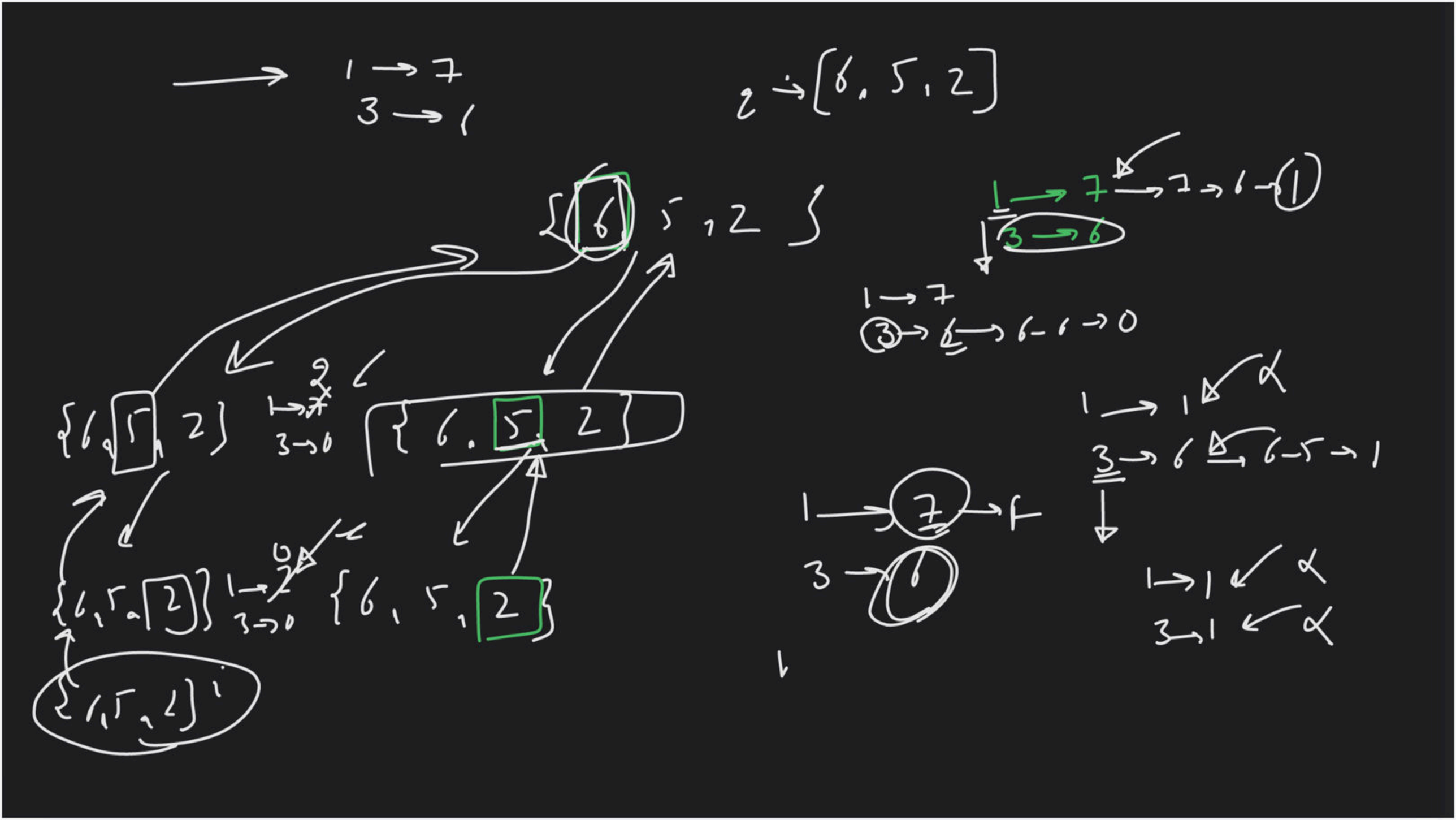
$1 \to 0$ ✗

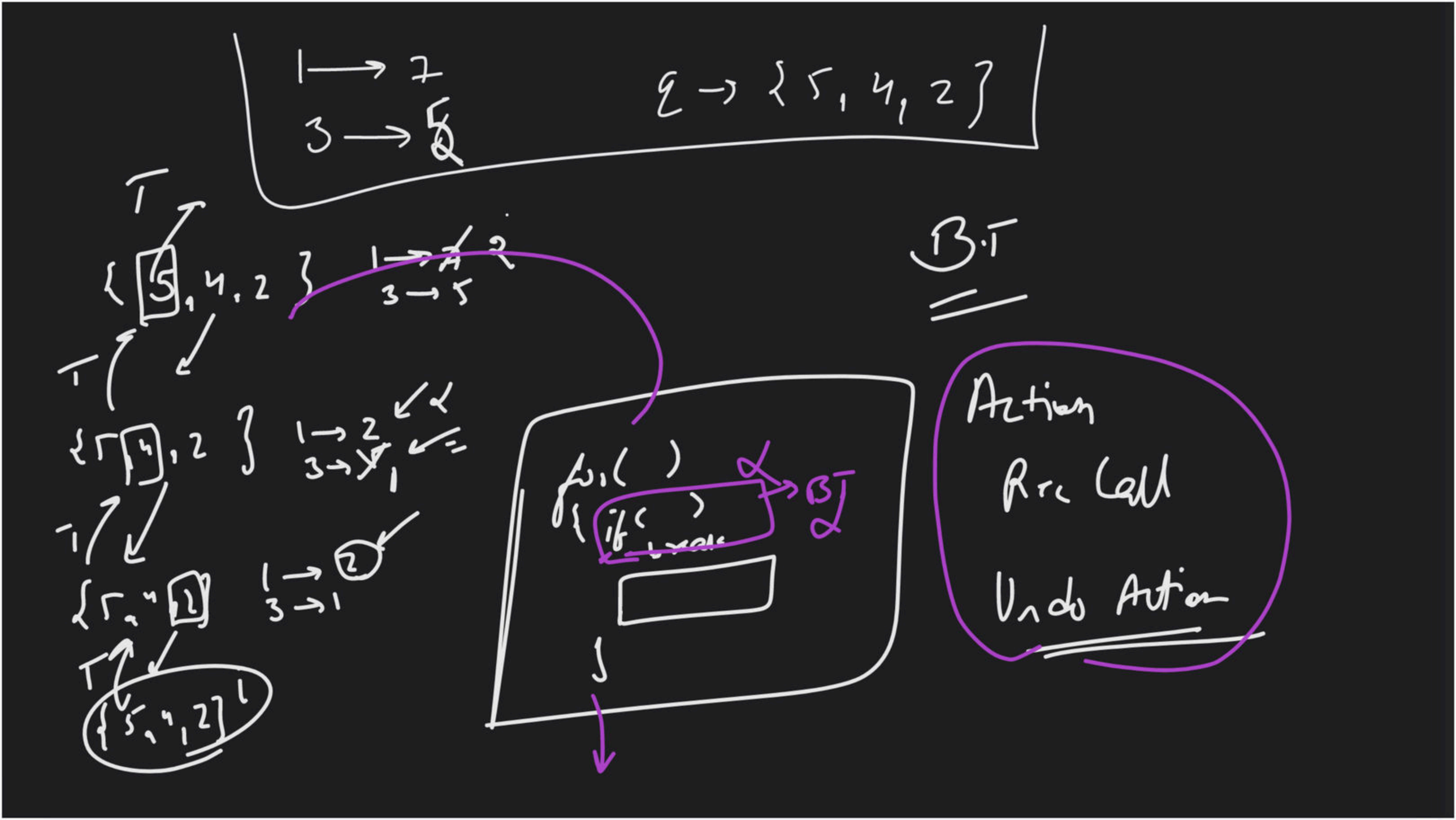
$2 \to \cancel{2}\ 0$

Tn

$f(q^{[2,2]}, \text{cnt}, \text{ins})$ $1 \to 0$, $2 \to 0$, 2

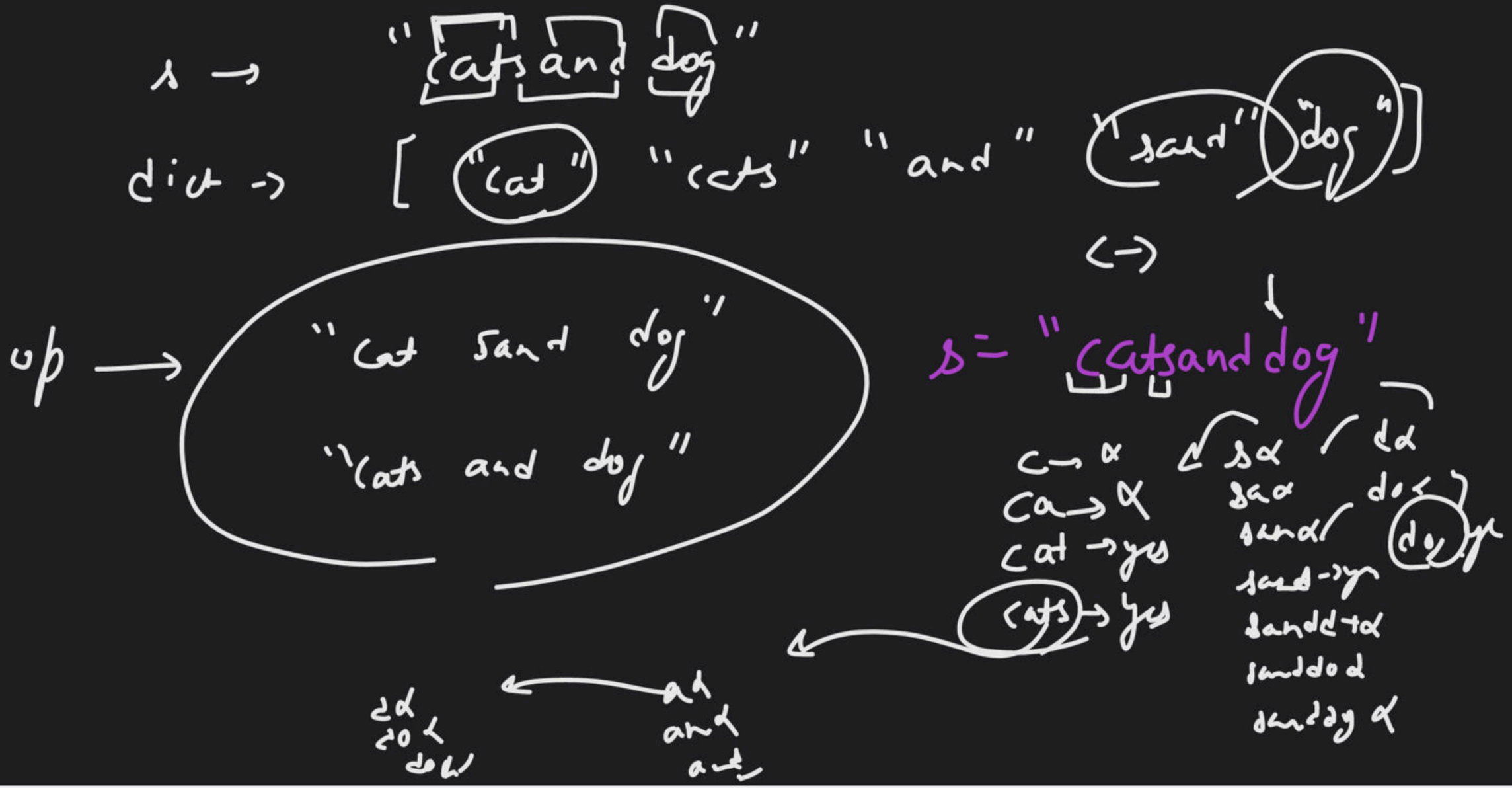
B.C

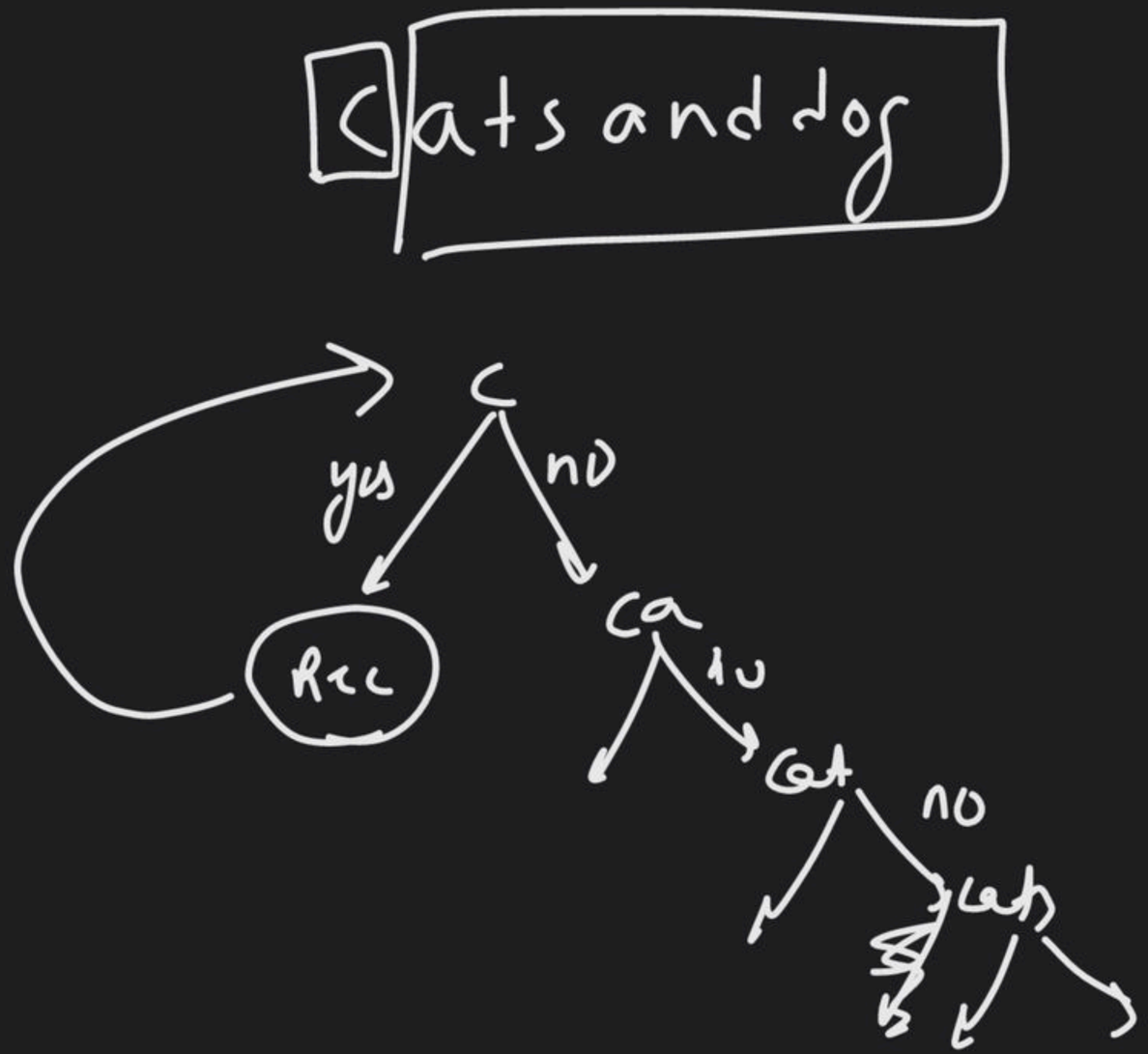

1 → 7
3 → 1
2 → [6, 5, 2]
{6, 5, 2}
{6, 5, 2}
{6, 5, 2}
{6, 5, 2}
1 → 7 → 2 → 6 → 1
3 → 6
1 → 7
3 → 6 → 6 → 1 → 0
1 → 7
3 → 1
1 → 1
3 → 6 → 6 → 5 → 1
1 → 1
3 → 1


1 → 7
3 → 5
Q → {5, 4, 2}
T
{5, 4, 2}
1 → 2
3 → 5
T
{4, 2}
1 → 2
3 → 1
T
{4}
1 → 2
3 → 1
T
{5, 4, 2}
B.T
fn1( )
if( )
BT
Action
Rec Call
Undo Action

(1) Word Break → I

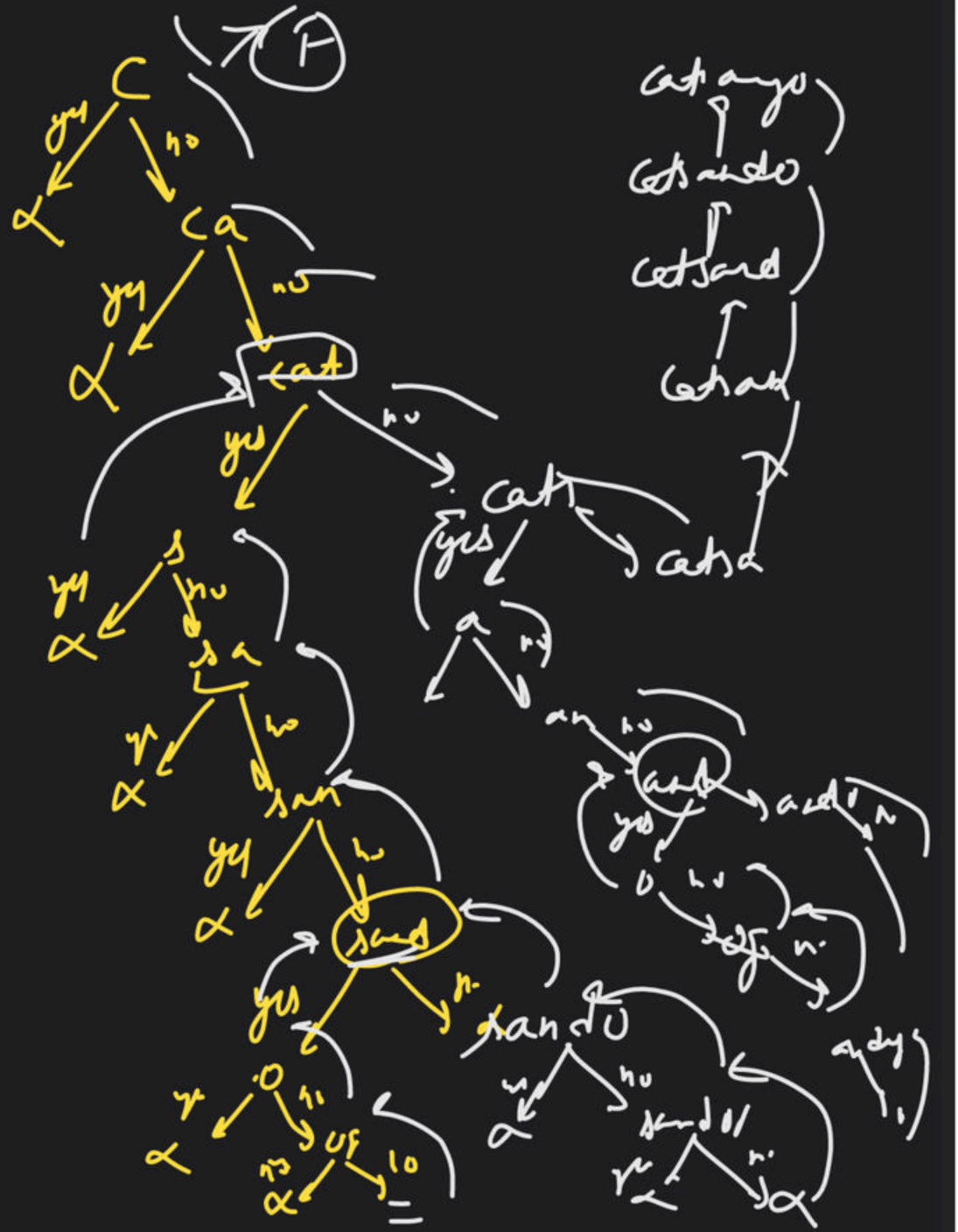
(11) Word Break -II

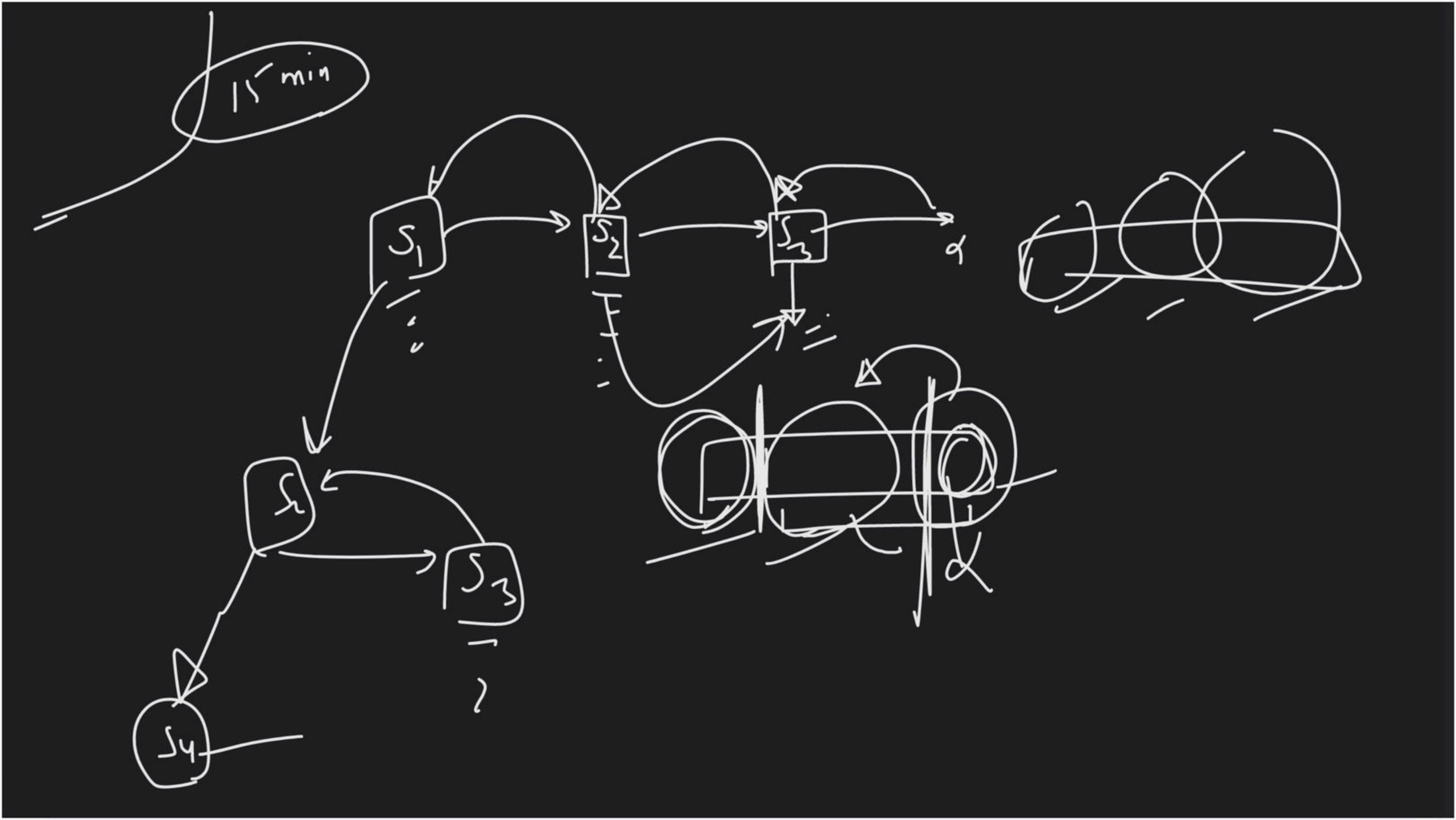



Cats and dog
C
yes
no
Rec
Ca
no
Cat
no
Cats

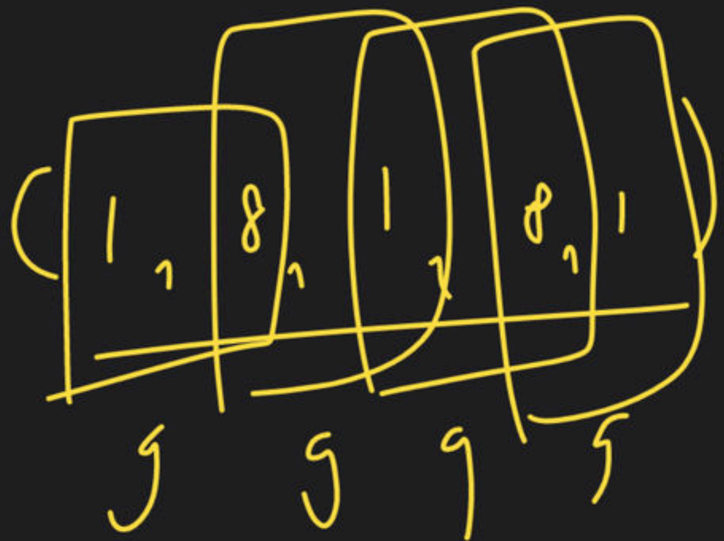
S → "catsanddog"

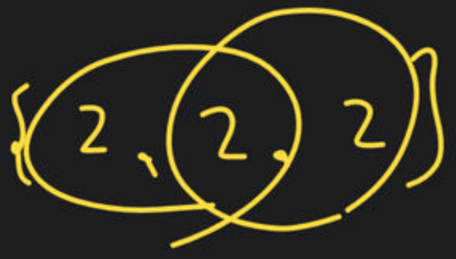
dict → ["cats"
"dog"
"sand"
"and"
"cat"]




15 min
S1
S2
S3
S4

③ Number of Squareful Arrays → H/W





{x, y, z, a}

~~x+y~~ → (K)²

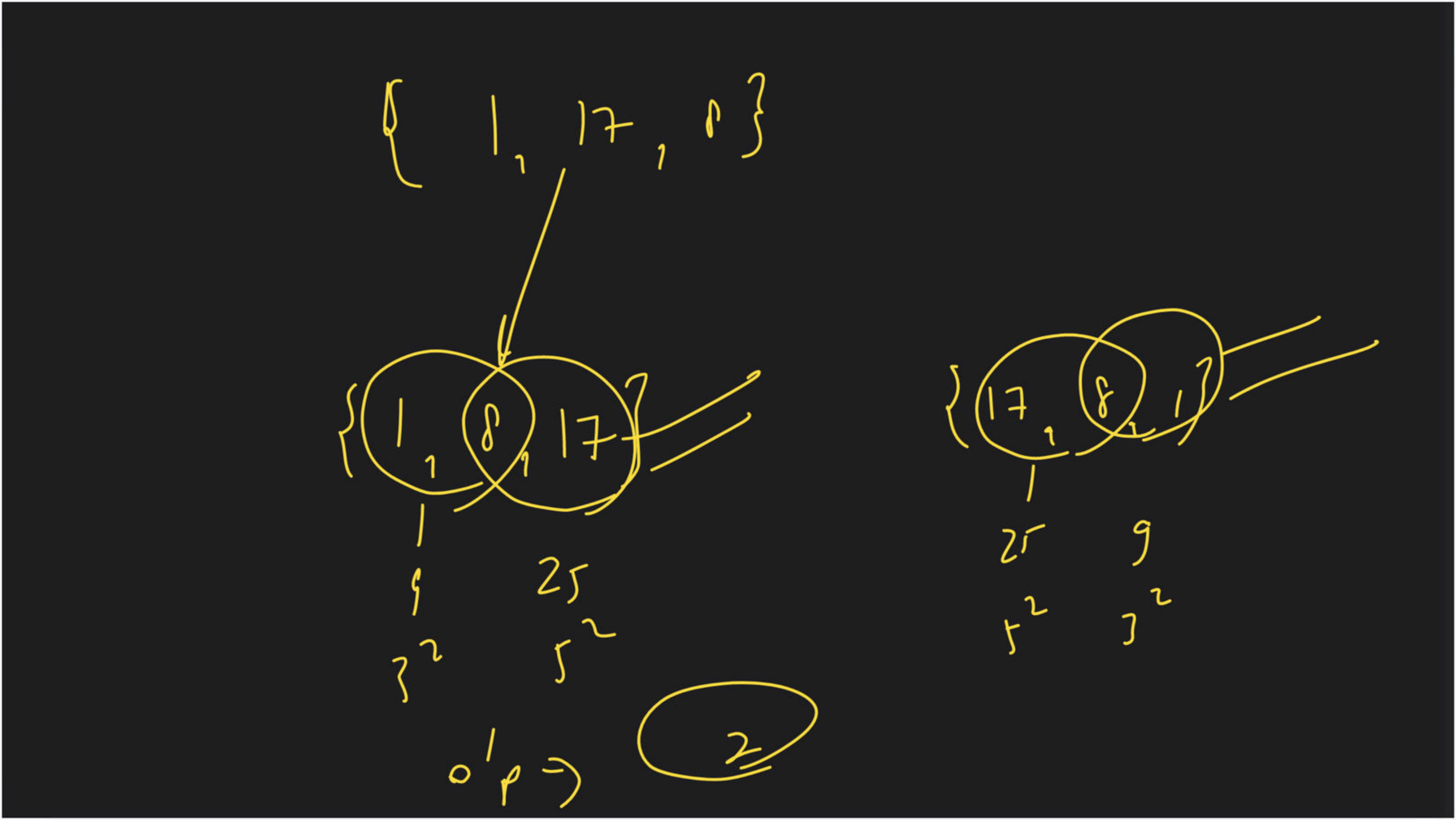
y+z → (p)²

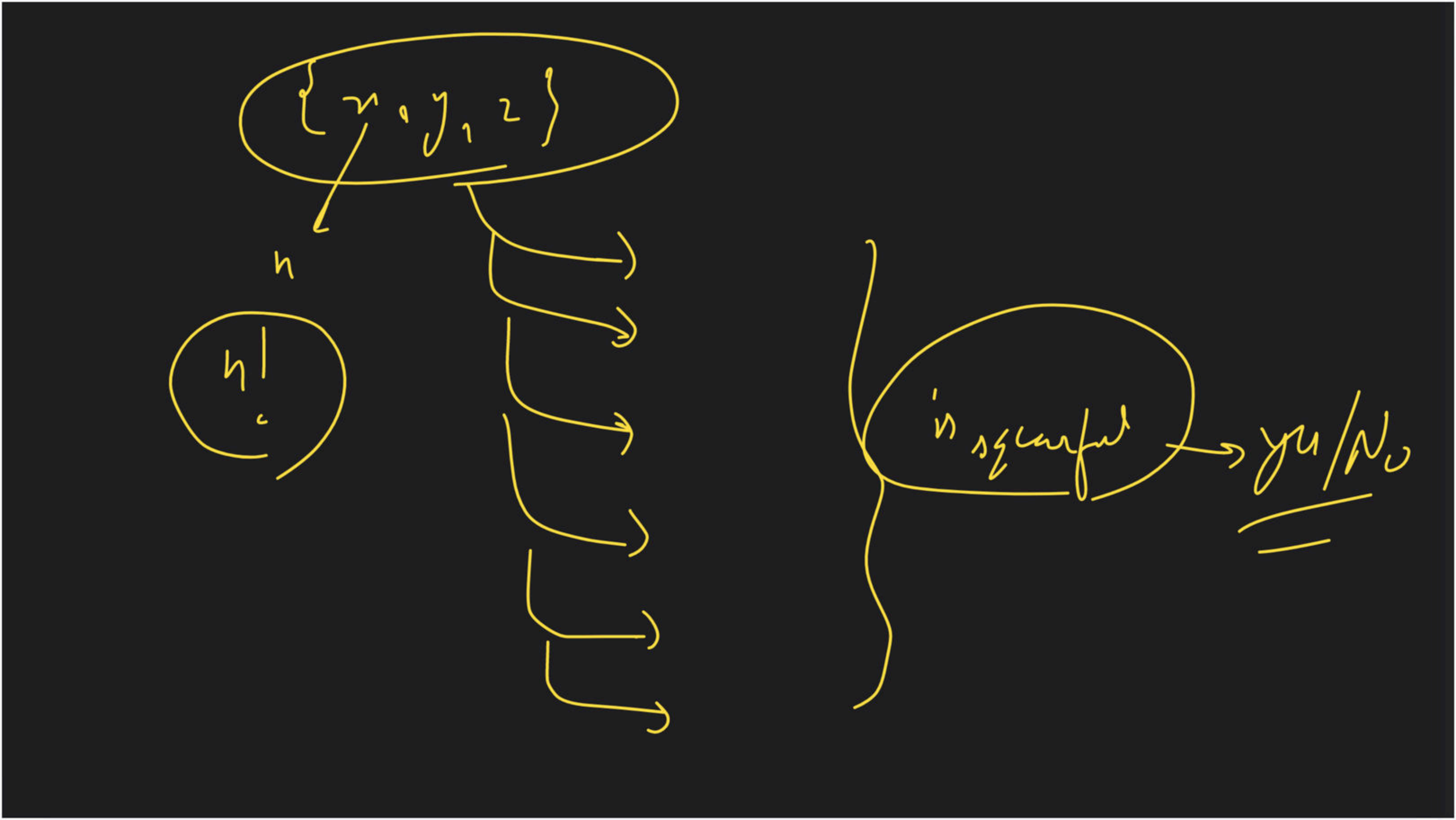
z+a → (ℓ)²

3^2 3^2 3^2 3^2

2^2 1^2

{1, 18, 7}


{ 1, 17, 8 }
{ 1, 8, 17 }
1
9
3²
25
5²
{ 17, 8, 1 }
25
5²
9
3²
o/p =>
2


{x, y, z}
n
n!
c
is useful
yes/No

distribute repeating int →

Word Break II

Number of Squareful Arrays → H/W → Solve

Unique Path III → H/W

Lecture