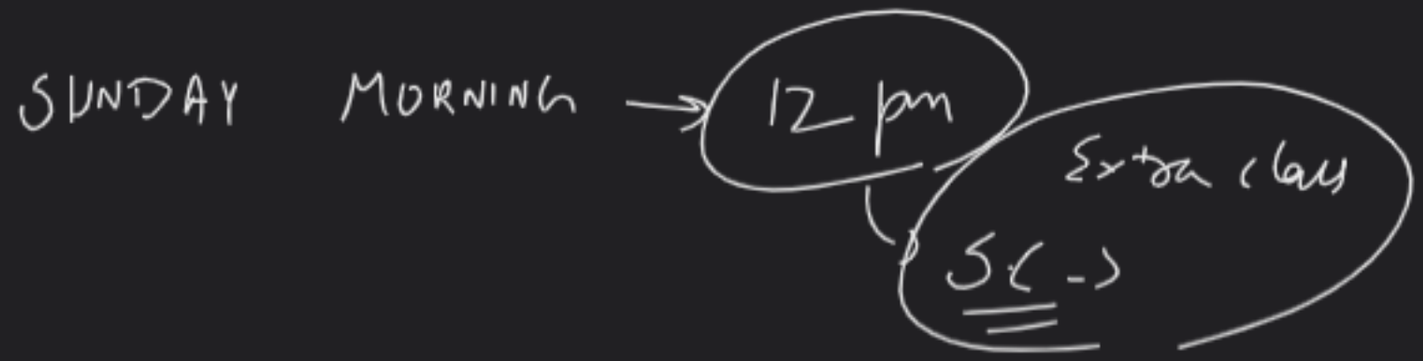


Solving Medium Questions - Level 2 & Doubt Clearing Session - LIVE

Special class

2 minute wait

Vishal Pachauri • Sept 17, 2022

① Painting fence

- "N" post
- "k" colors

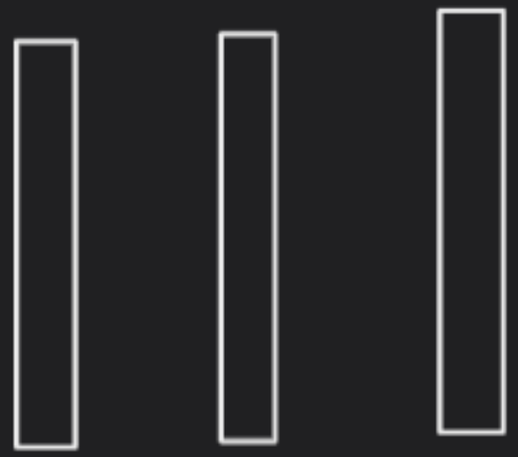
not more than 2 adjacent post have same color

find total no of ways

k → colors

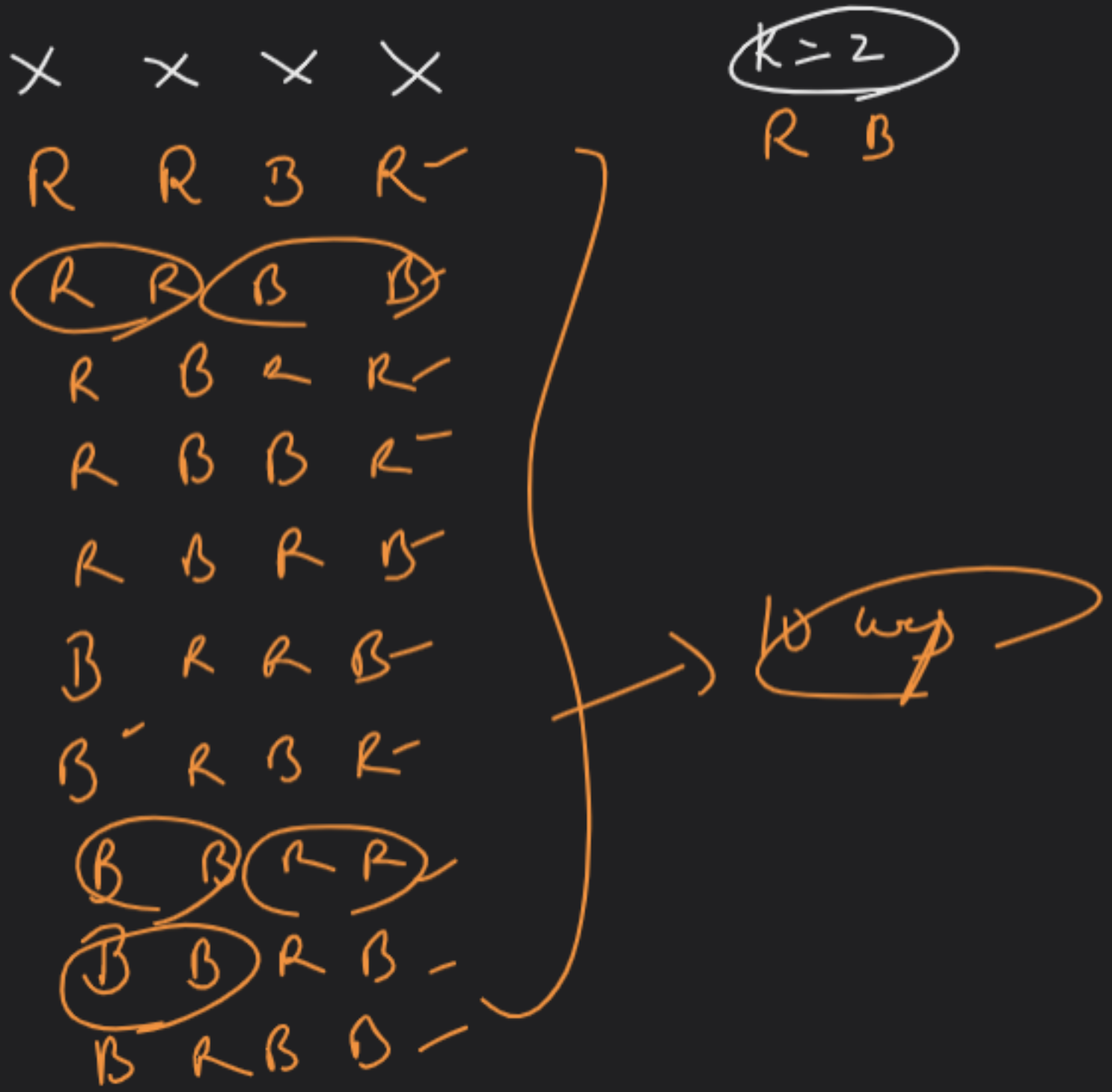
K = 2

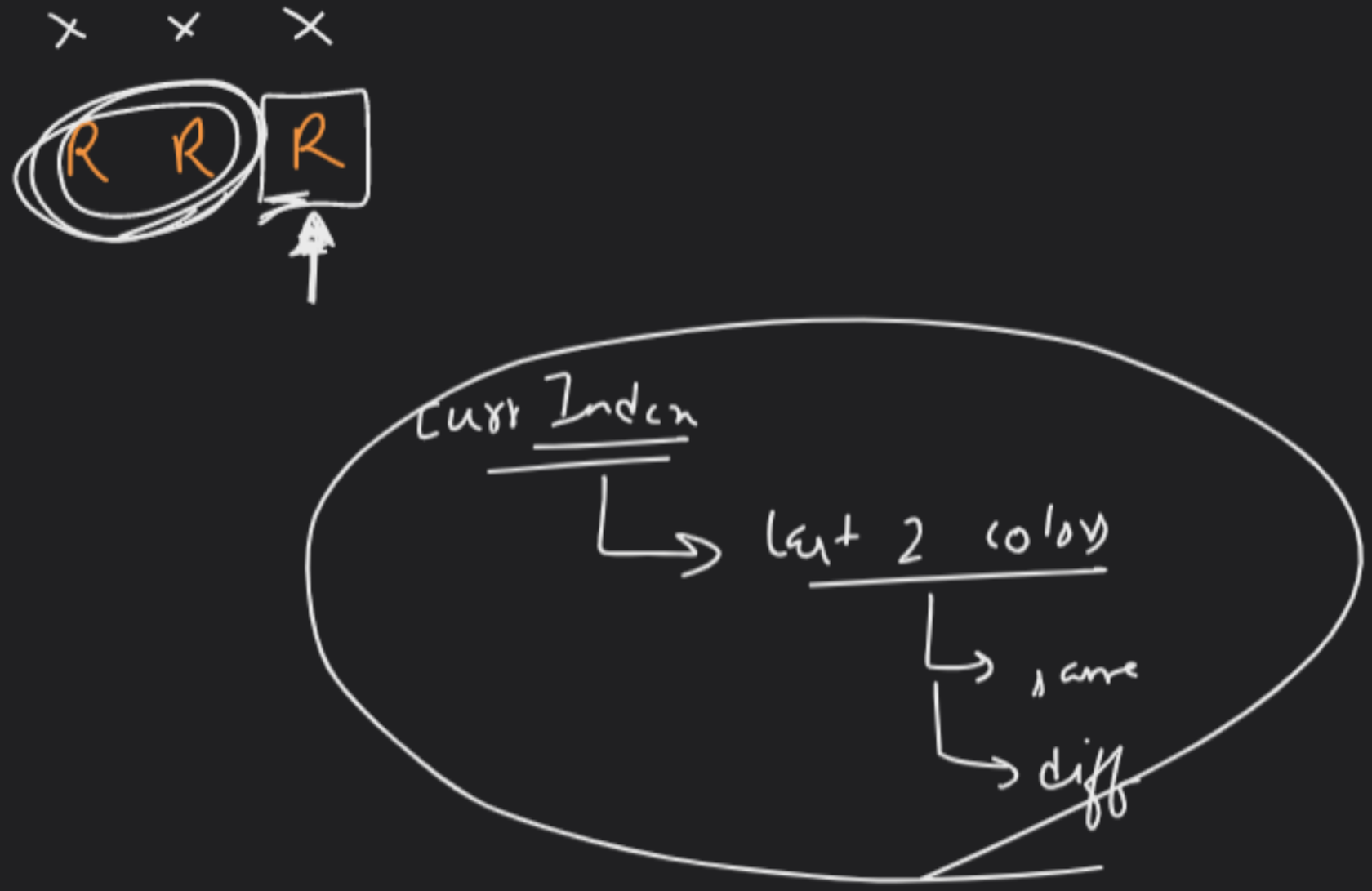
R B

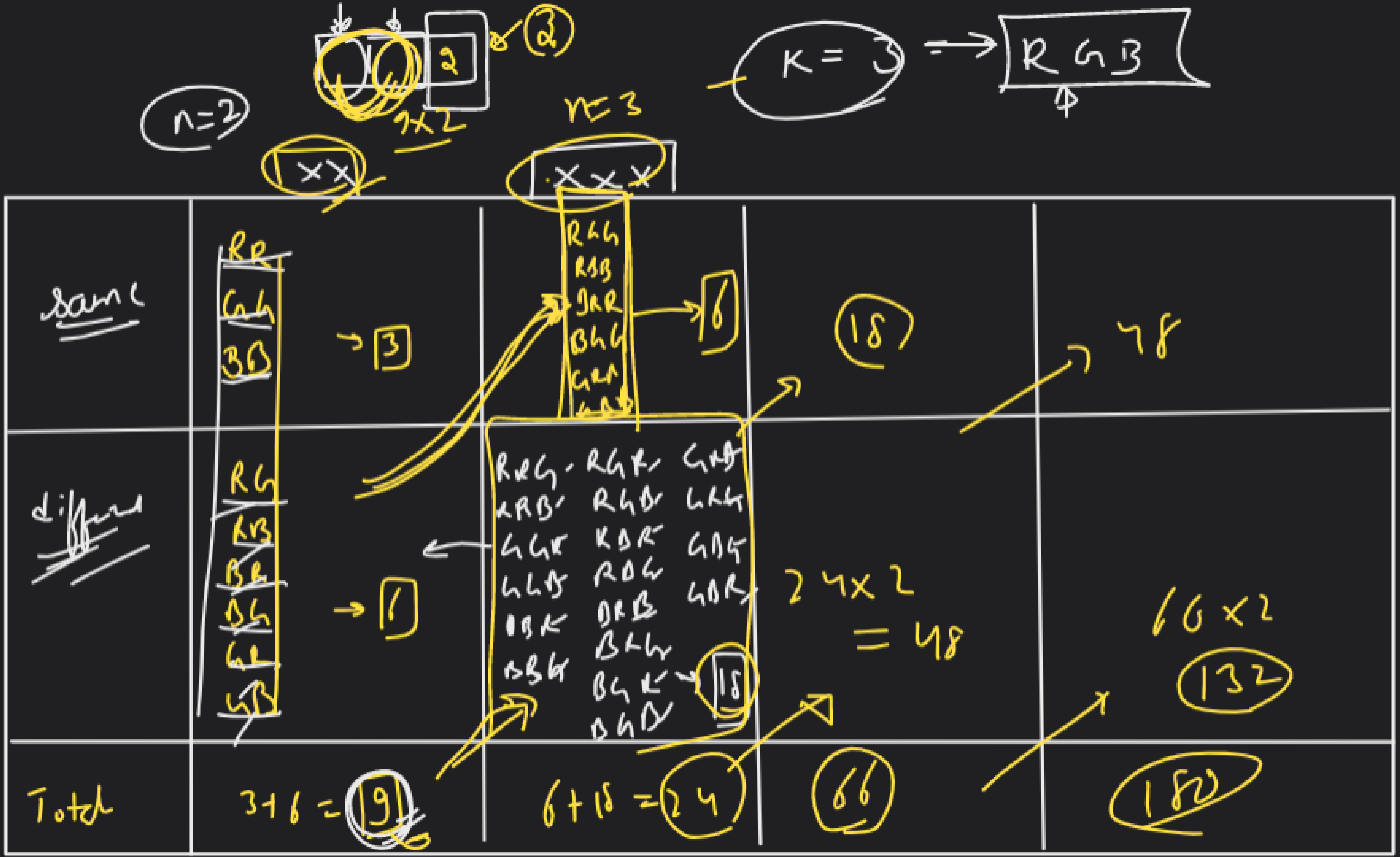


R	R	B
R	B	R
R	B	B
B	R	R
B	R	B
B	B	R

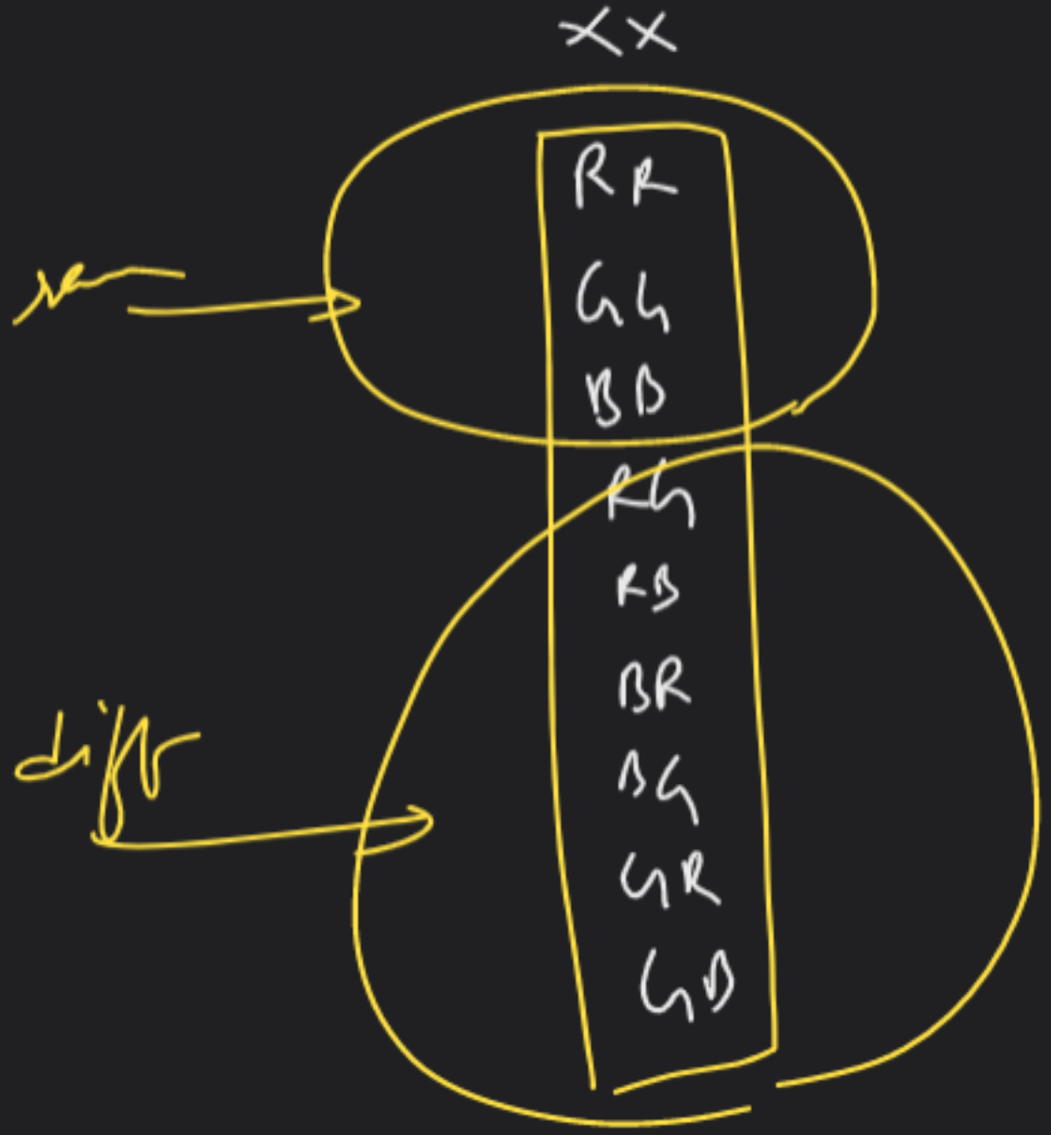
ans = 6


X X X X
R R B R
R R B B
R B R R
R B B R
R B R B
B R R B
B R B R
B B R R
B B R B
B R B B
K=2
R B
10 ways

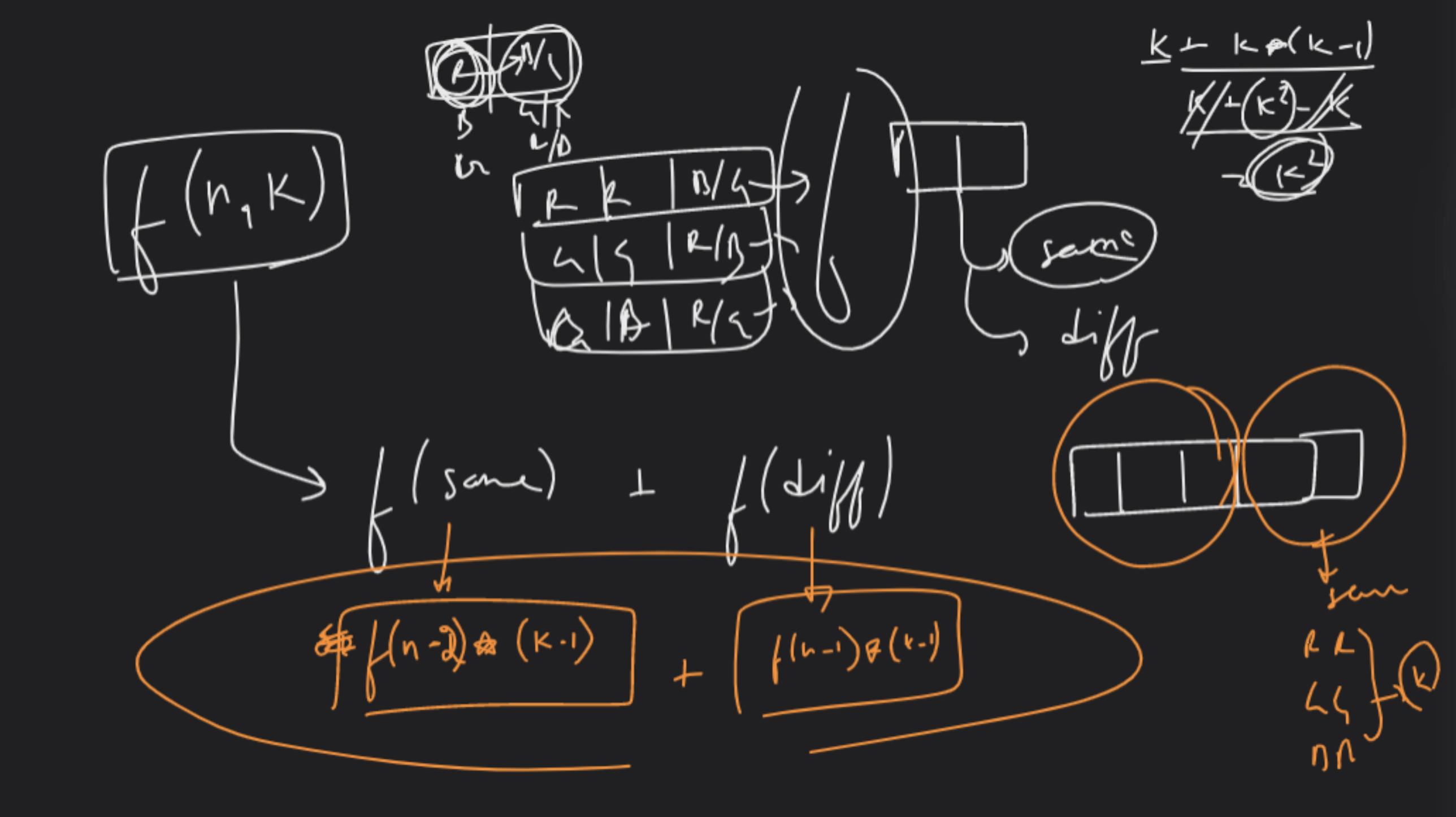

R R R
Curr Index
last 2 colors
same
diff

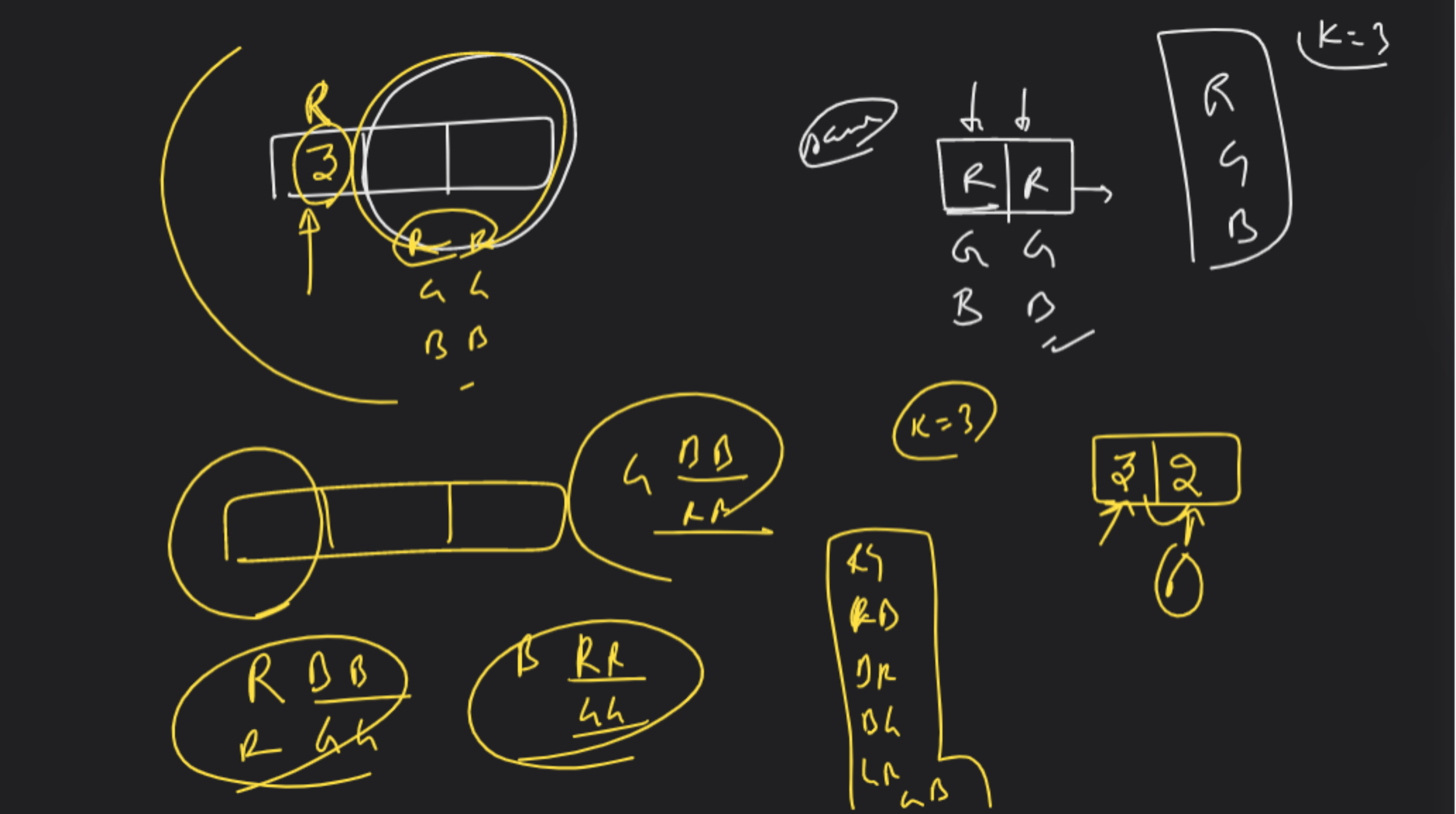

n=2
2
K = 3
RGB
n=3
XX
XXX
same
different
Total
RR
GG
BB
→ 3
RG
RB
BR
BG
GR
GB
→ 6
3+6 = 9
6+18 = 24
18
24 x 2
= 48
66
48
66 x 2
132
180

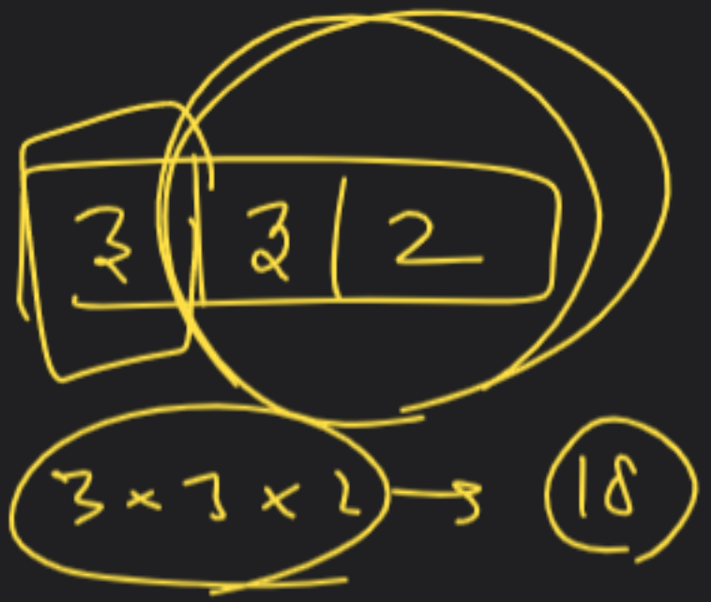
K = 3 → RGB



	n=1	n=2	n=3	n=4	n=5
same →	↗	RR GG BB (K) 3	RGG RBB BRR BGG GBB GRR 6	18	42
diff →	↗	RG RB GR BR BG GB K×(K-1) 3×2 6	RRB RRG GGR GGB BBR BBG RGR RGB RBR RBG BRB BRG BGB BGR GRB GRG GBR GBG 6×2 = 18	24×2 = 48	132 K-1
Total →	R G B → 3	3+6 = 9	6+18 = 24	66	


f(n, K)
same
diff
f(same) ⊥ f(diff)
f(n-2) ⊛ (K-1)
+
f(n-1) ⊛ (K-1)
same


K=3
K=3

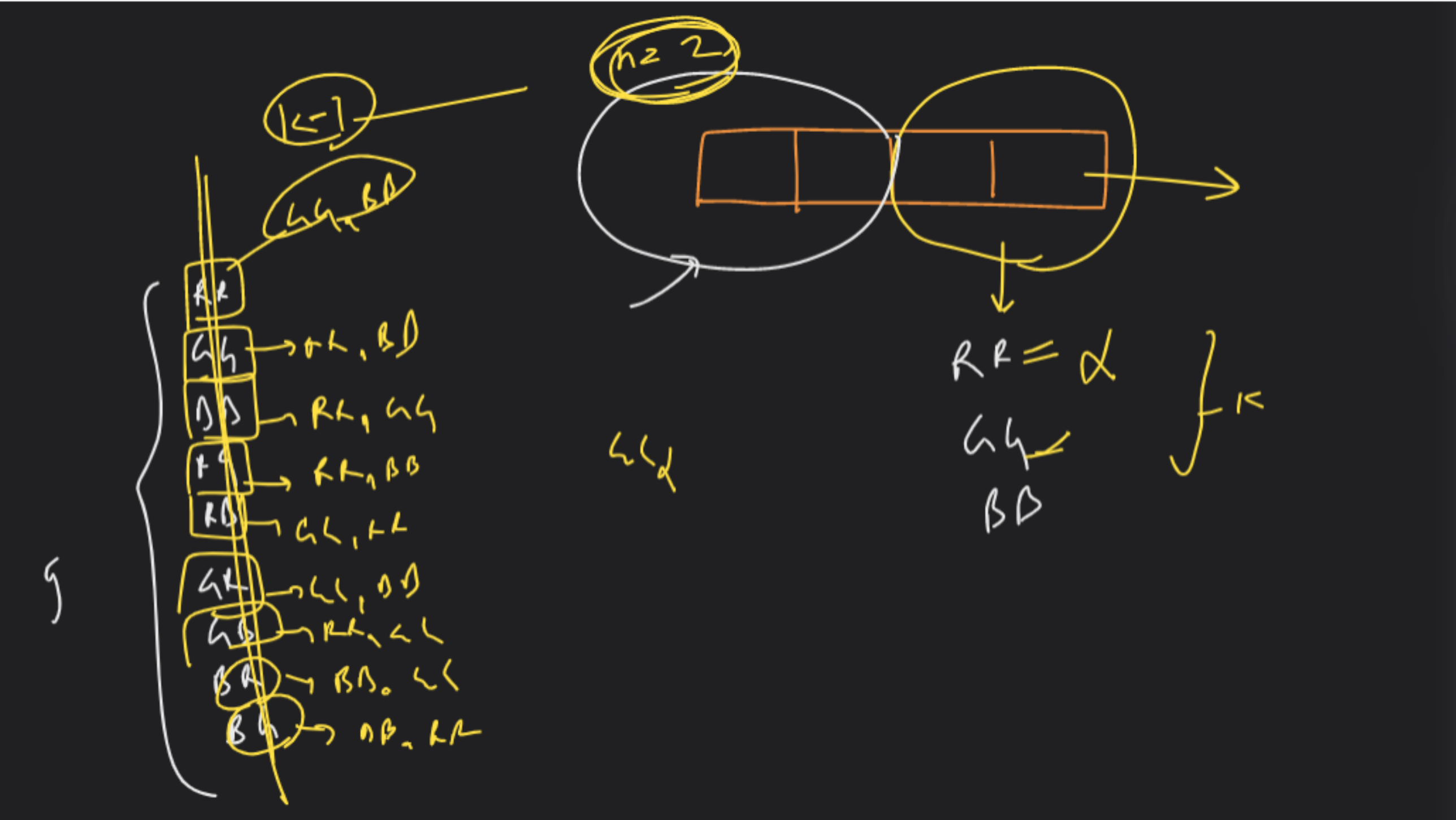

3
3
2
3 × 3 × 2
18

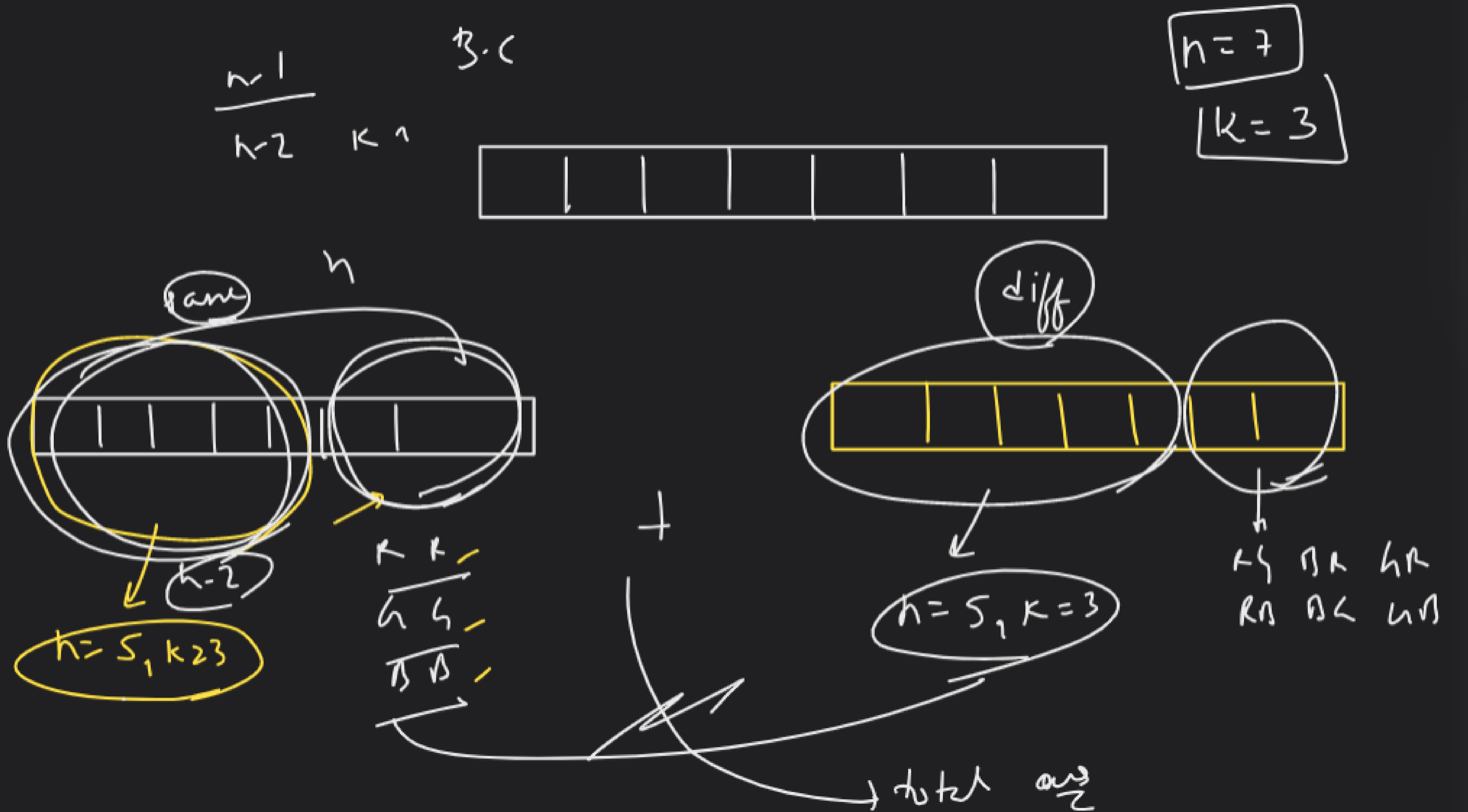
solve(n, k) = [same] + [diff]

solve(n, k) = solve(n-2, k) * (k-1)

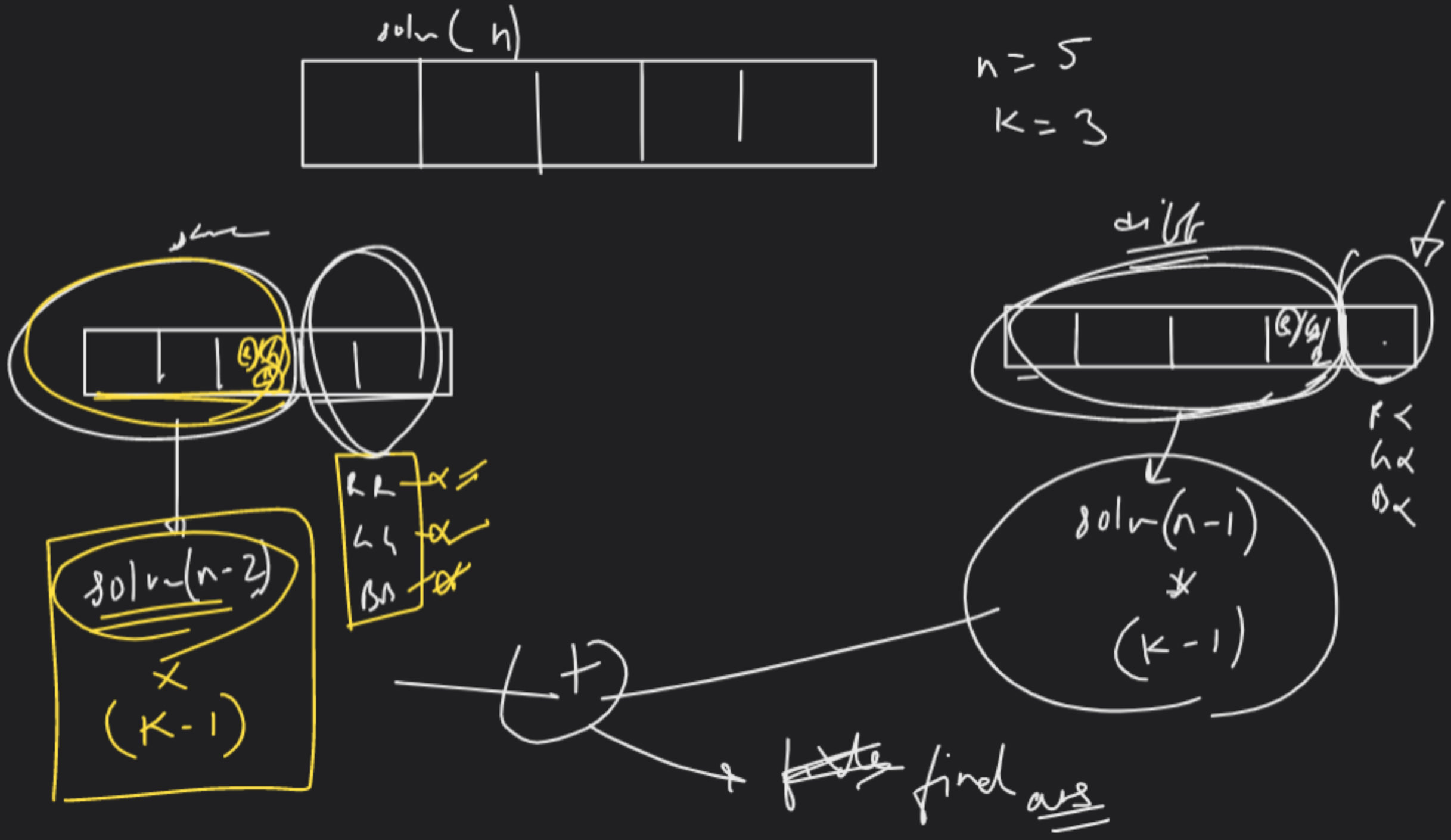
+

solve(n-1, k) * (k-1)

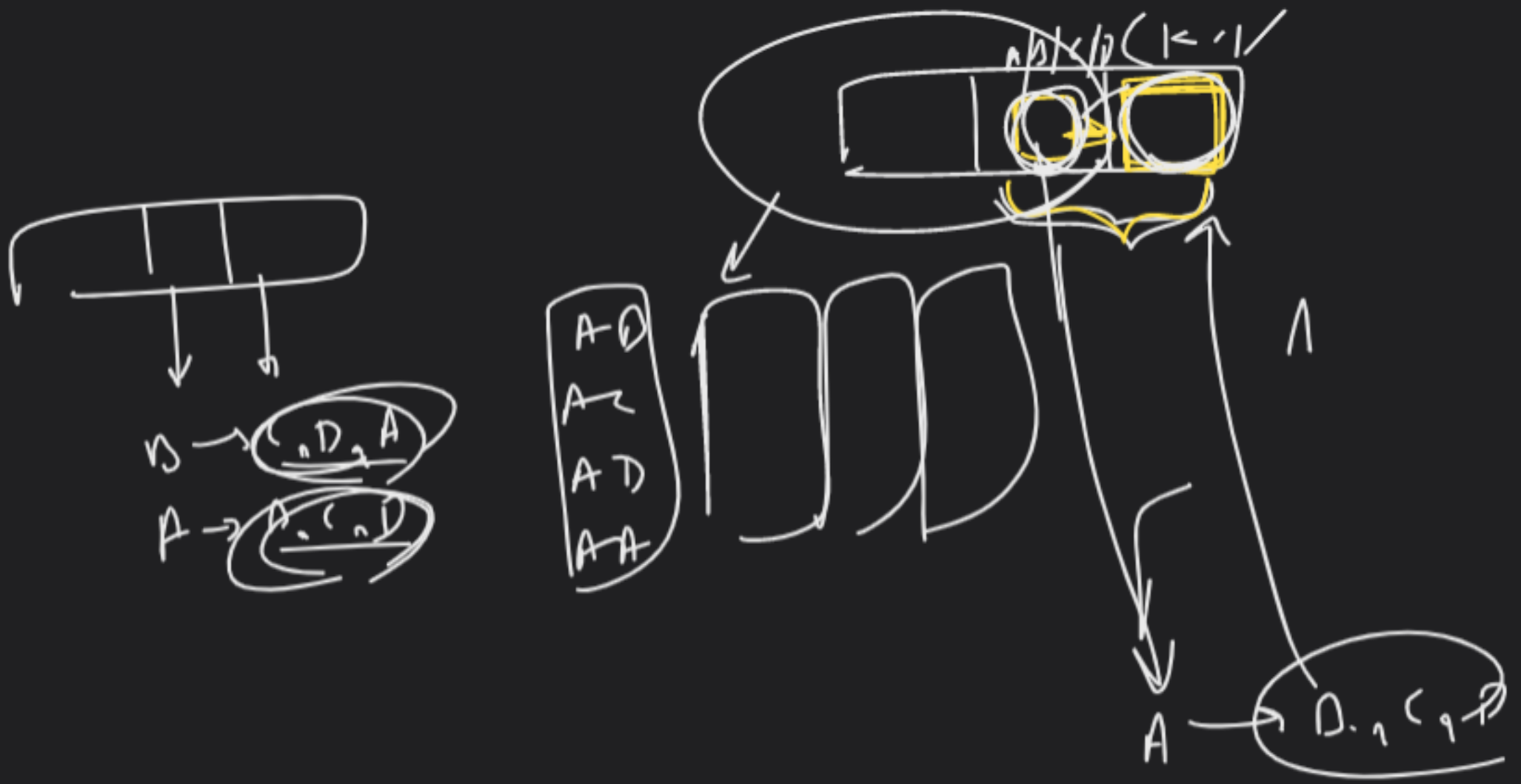




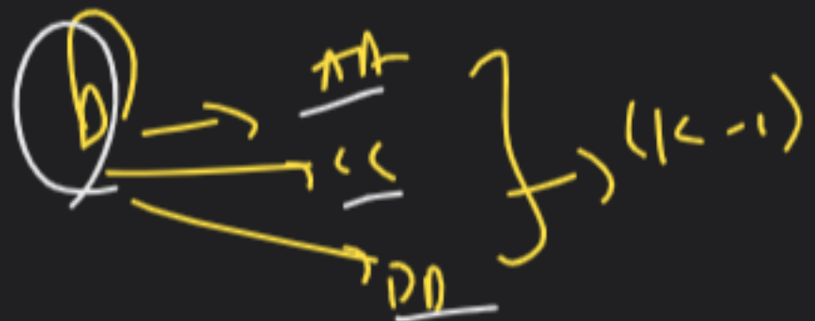
n-1
n-2 K-1
B.C
n = 7
k = 3
n
same
diff
n-2
n=5, k=3
n=5, k=3
+
total ans

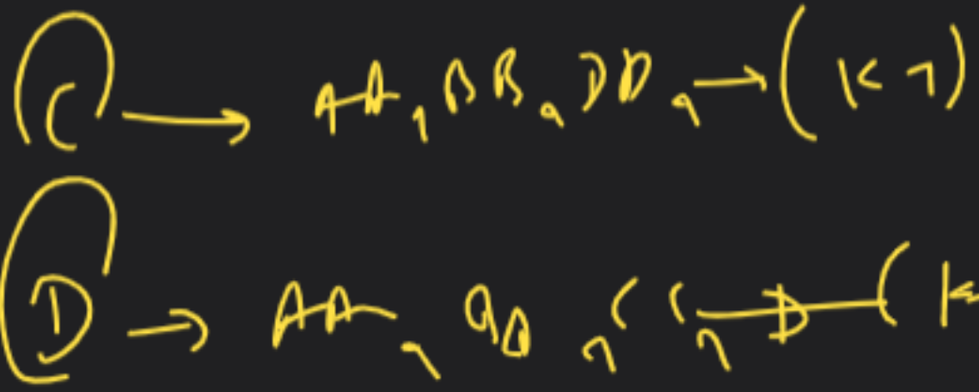

n = 5
K = 3
solve(n-2)
x
(K-1)
solve(n-1)
*
(K-1)
+
find ans

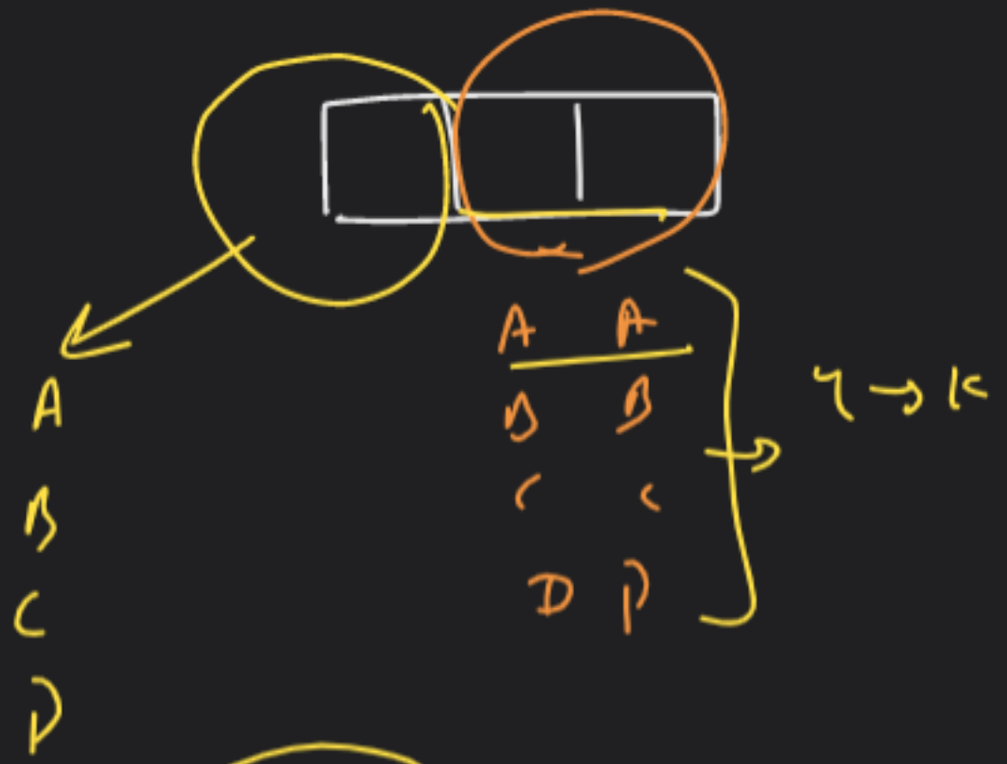
K -> 4	n = 1	n = 2	n = 3	n = 4
same		K	$K * (K-1)$	$K^2 * (K-1)$
diff		$K * (K-1)$	$K^2 * (K-1)$	$(\quad) * (K-1)$
Total	K	$K + (K * (K-1)) = K^2$	$K * (K-1) + K^2 * (K-1)$	

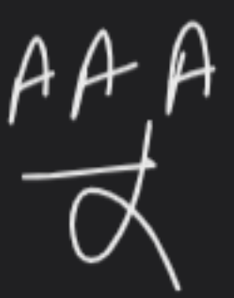


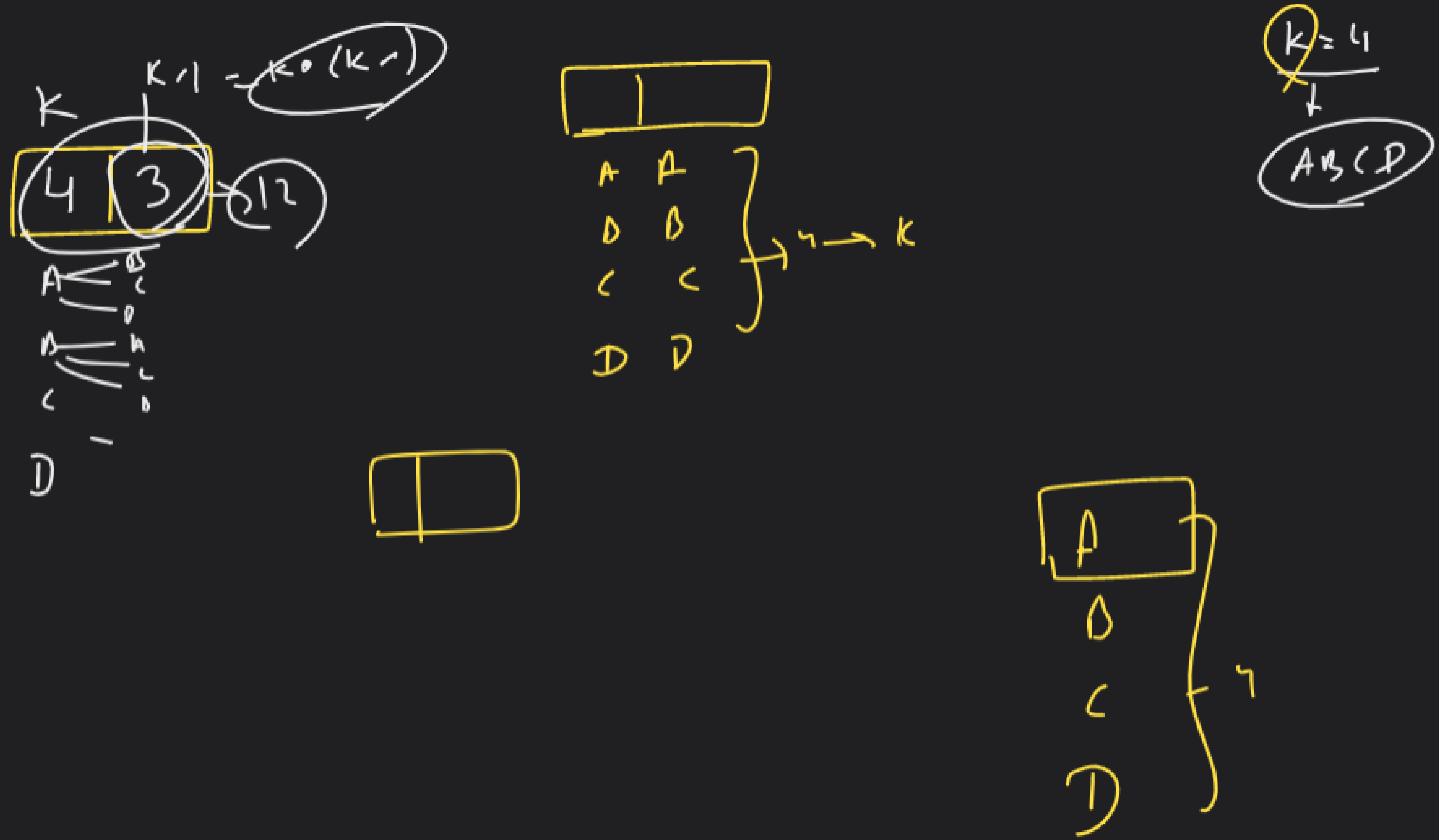

A
BB
CC
DD

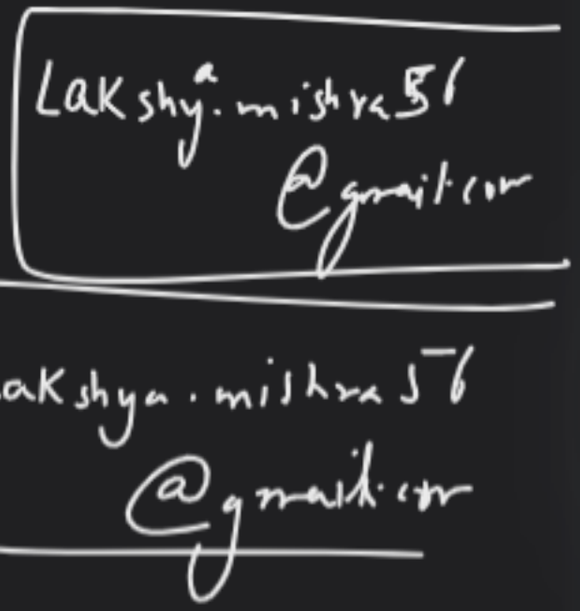

B
AA
CC
DD


C
D

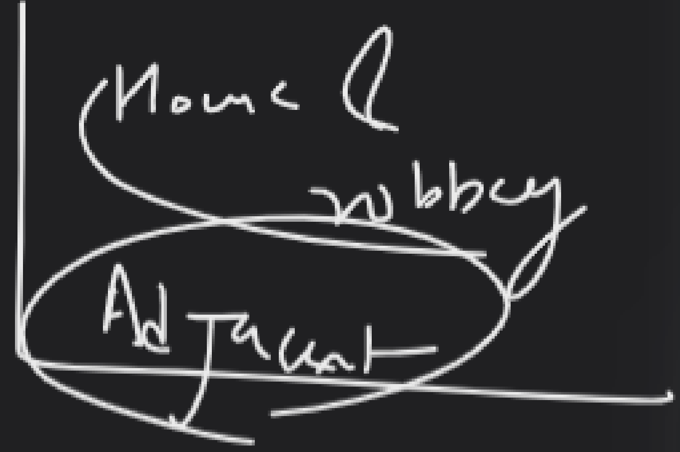

A
B
C
D
A A
B B
C C
D D



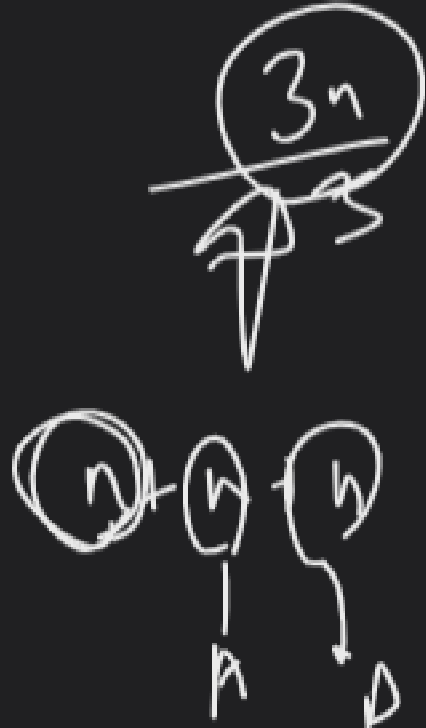

K
4
3
12
A
B
C
D
K = 4
ABCD


Lakshya.mishra57
@gmail.com
Lakshya.mishra56
@gmail.com

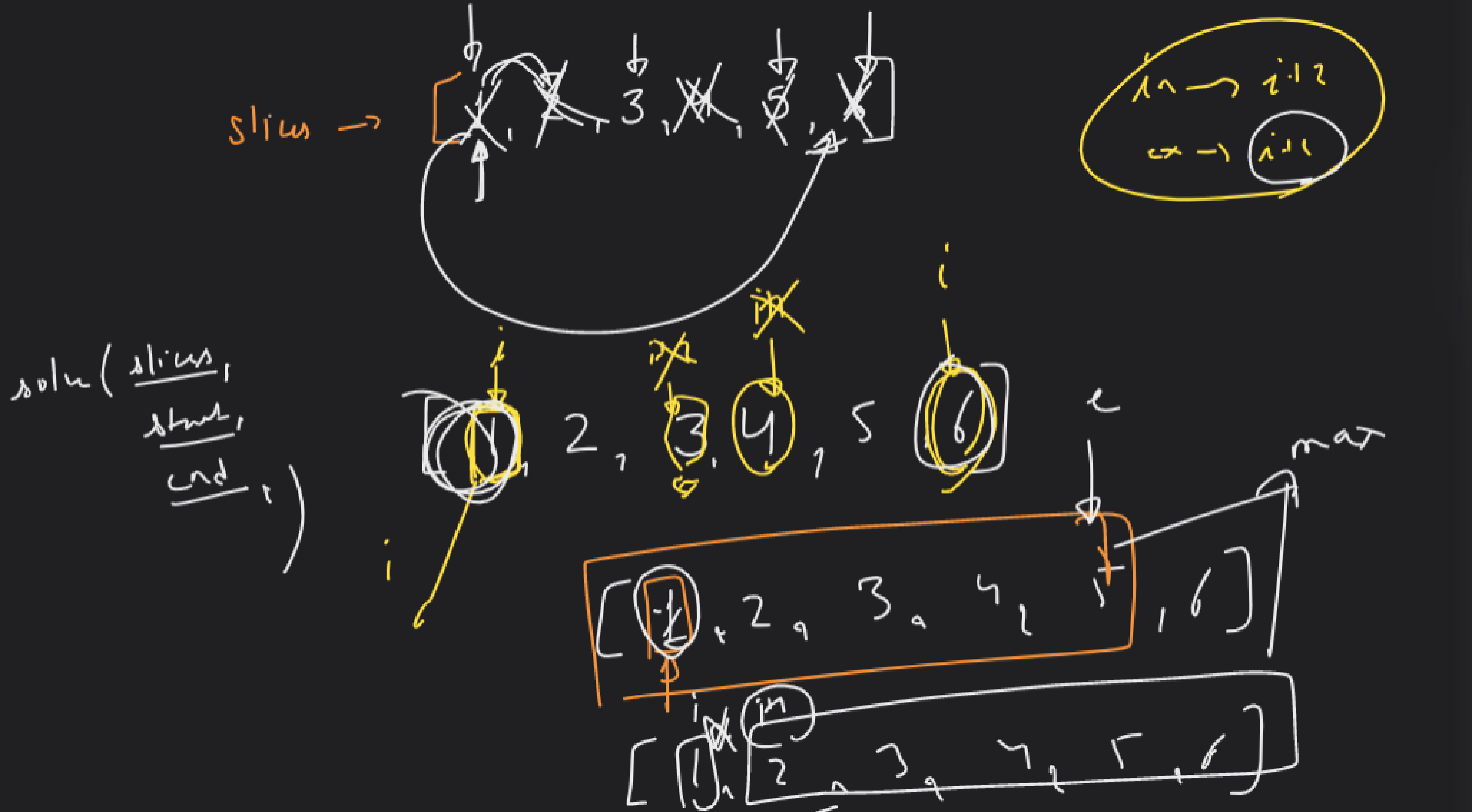
(2) Pizza with 3n slices

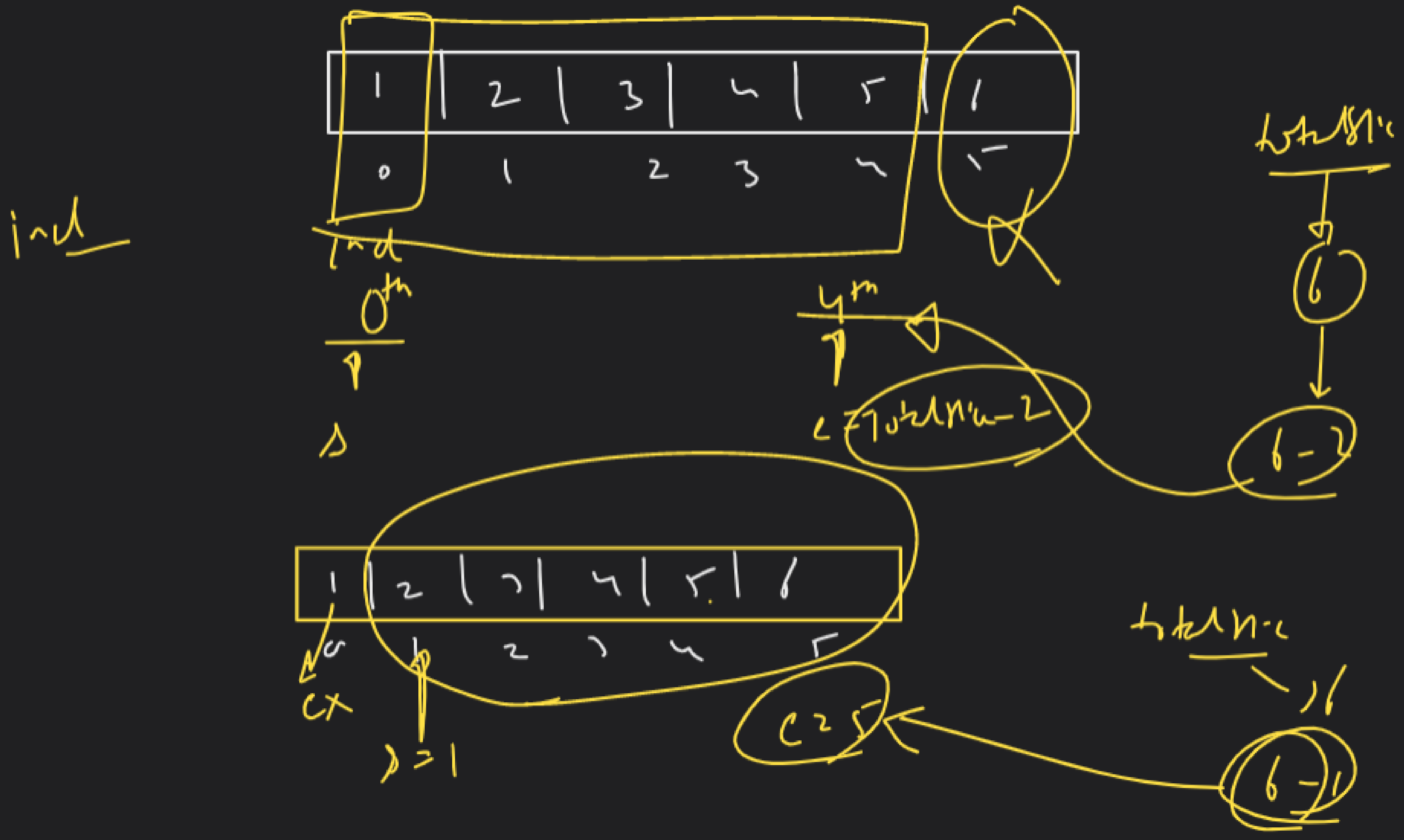


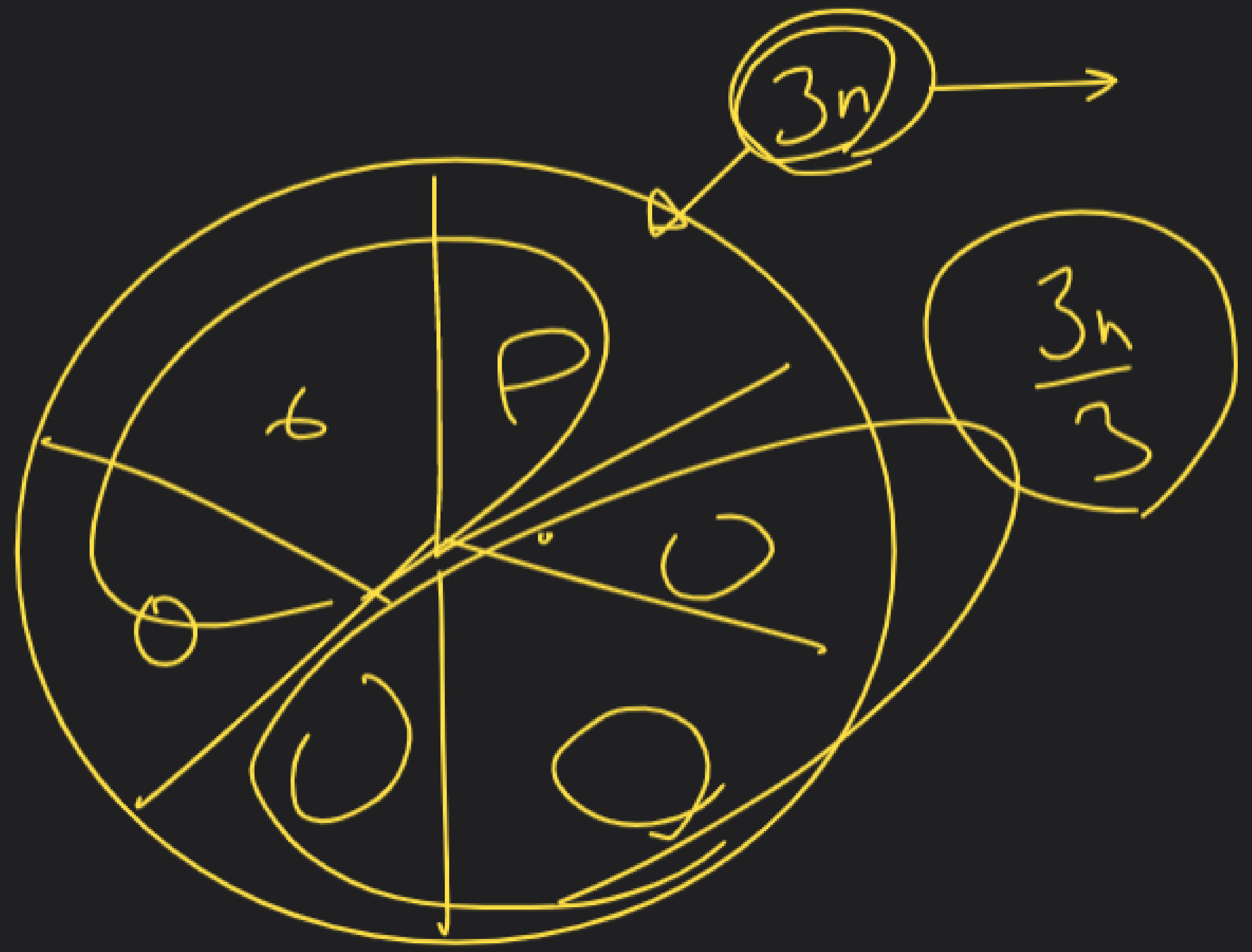
K = slices.size()



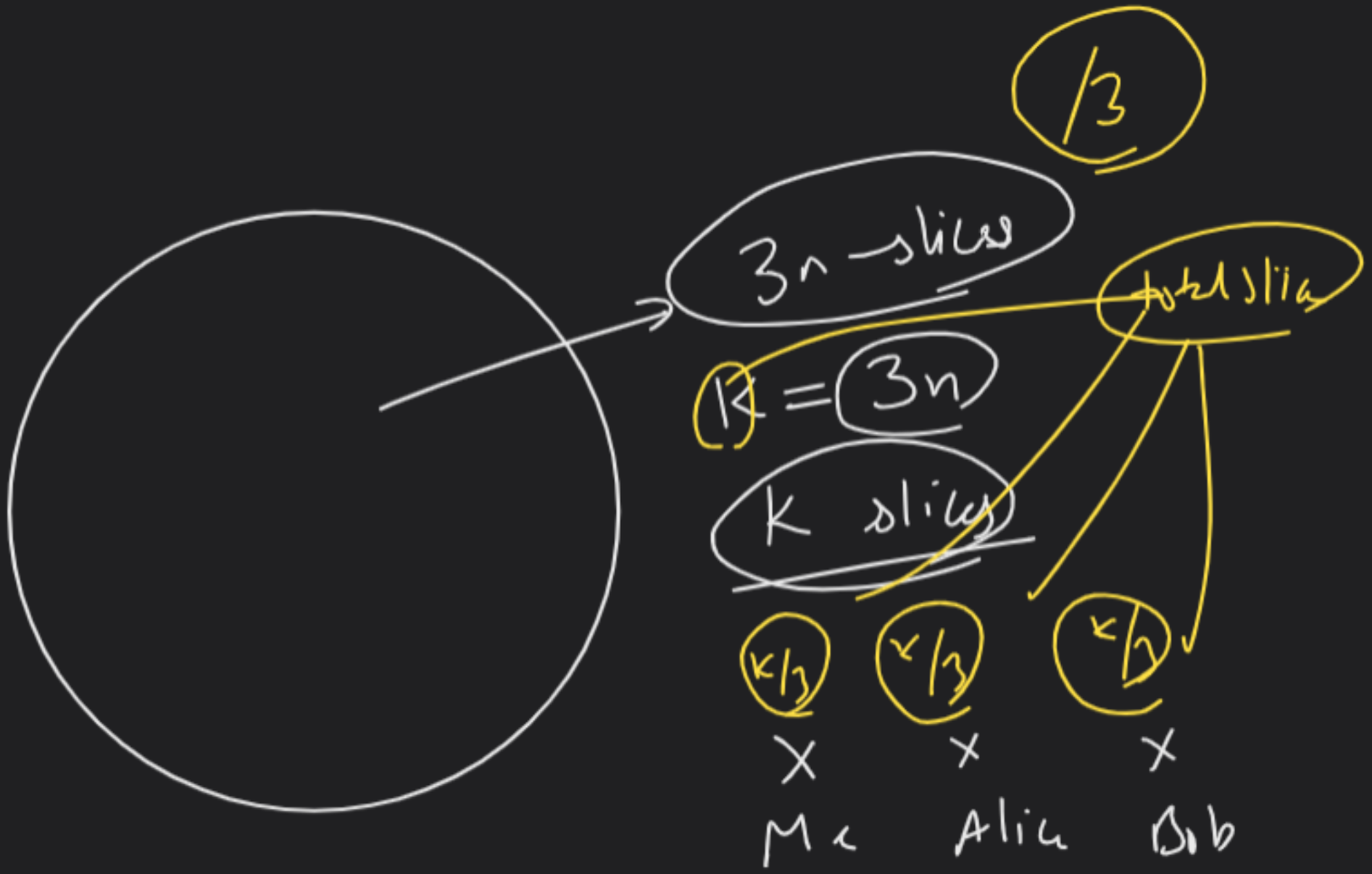
Sum = 4 + 6 → 10


slices →
solve(slices,
start,
end,)
max


ind
1 | 2 | 3 | 4 | 5 | 1
0 1 2 3 4 5
ind
0th
4th
6
6-2
1 | 2 | 3 | 4 | 5 | 6
0 1 2 3 4 5
s=1
6-1
c=5


3n
3n/3


remainder
+1
+1
+1
n
n
5
15/3
0/5
exp


3n
k = 3n
k
x
x
x
Ma
Alia
Bob

1	2	3	4	5	6

option 1 →

1	2	3	4	5
0	1	2	3	4

→ ans → 6

option 2 →

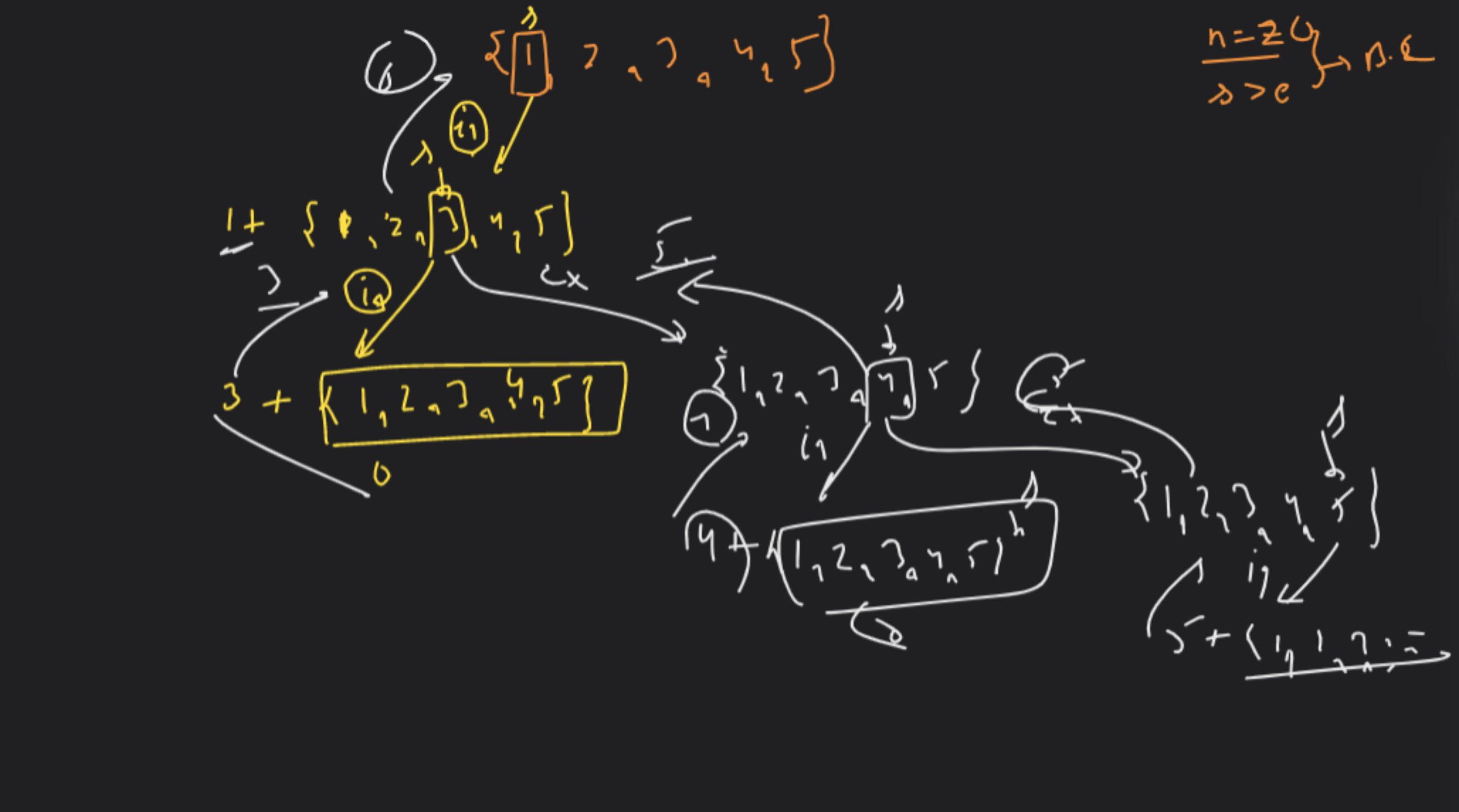
2	3	4	5	6
2	3	4	5	6

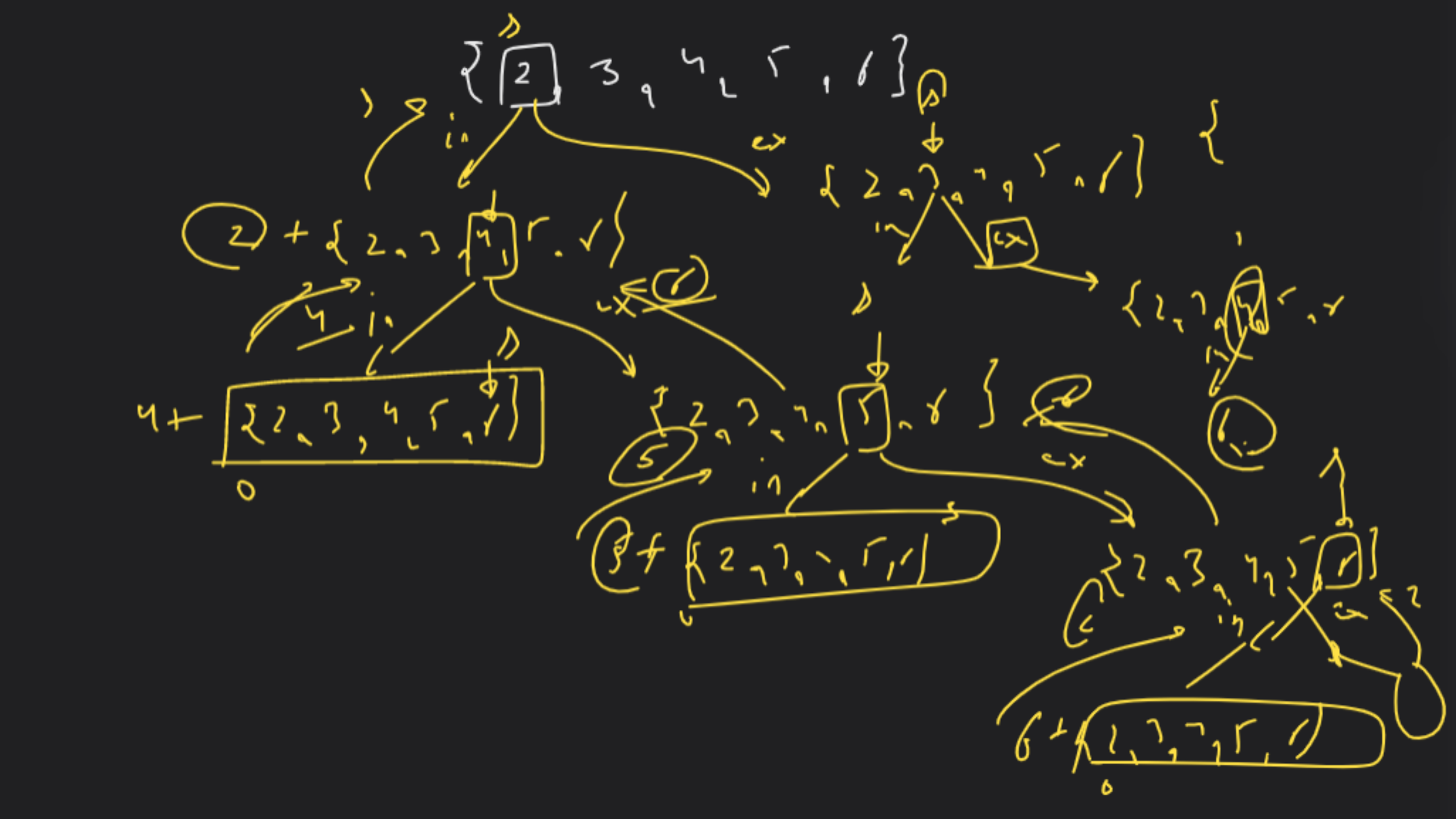
→ ans → 10

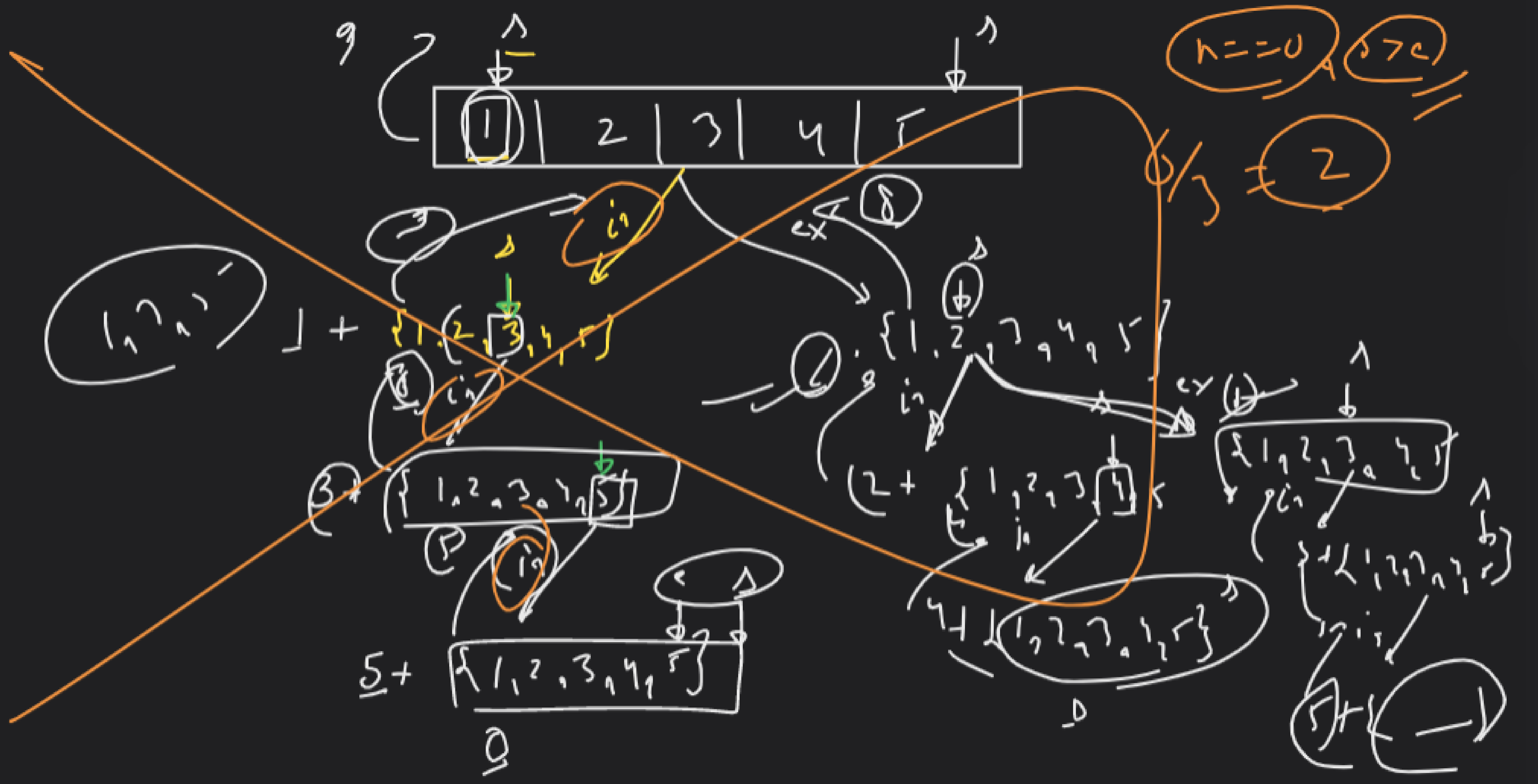
max

6

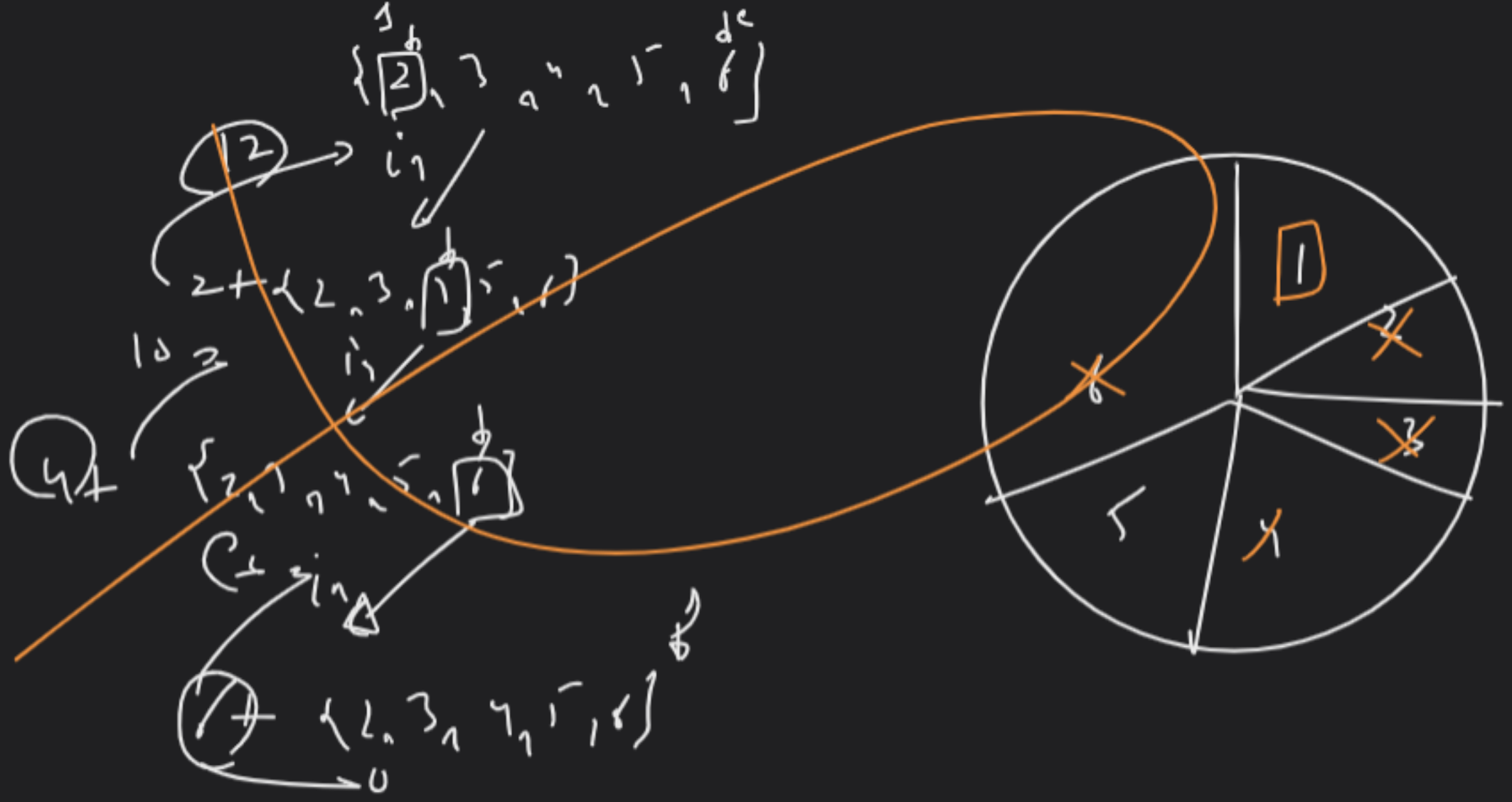
10

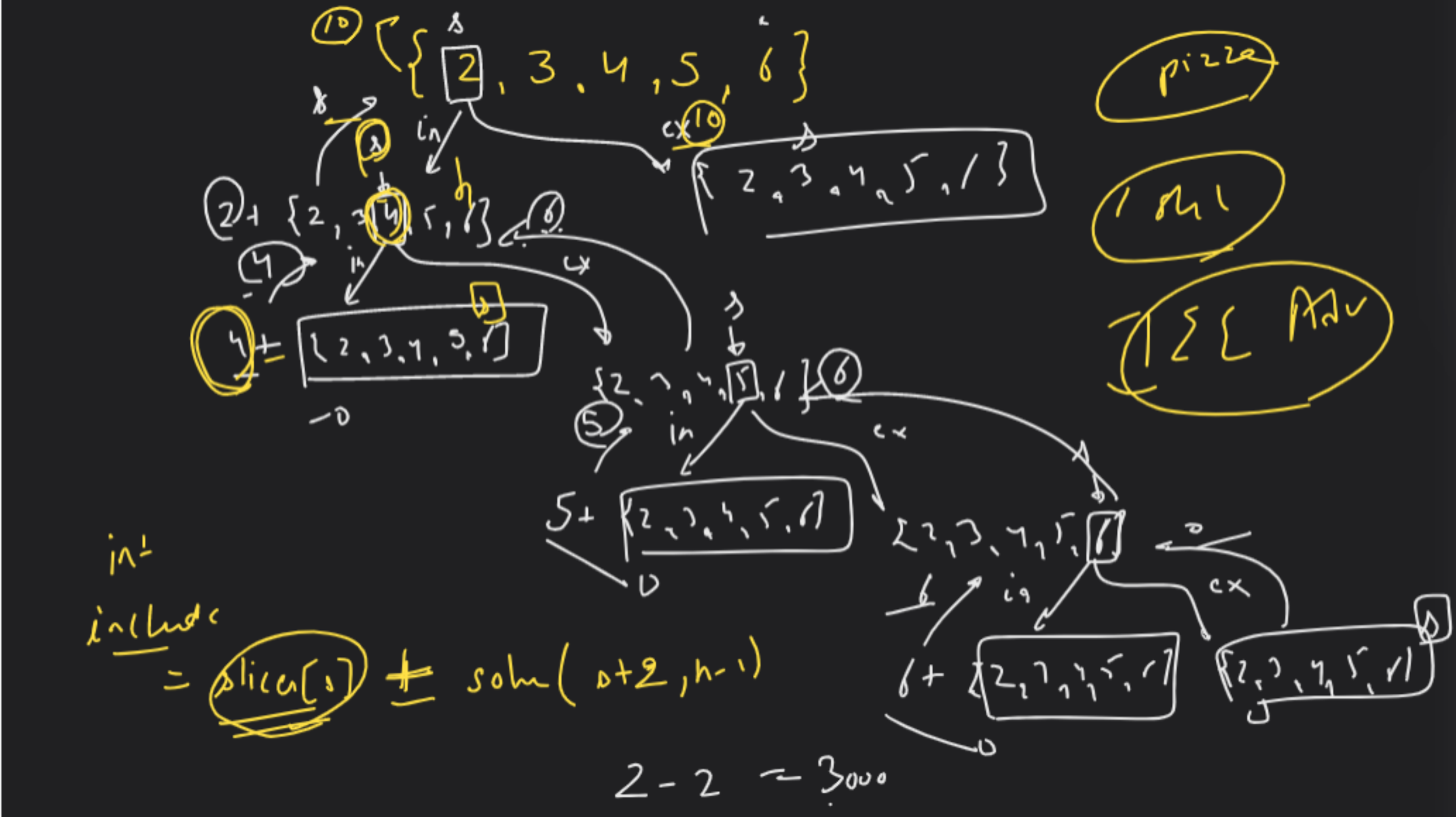


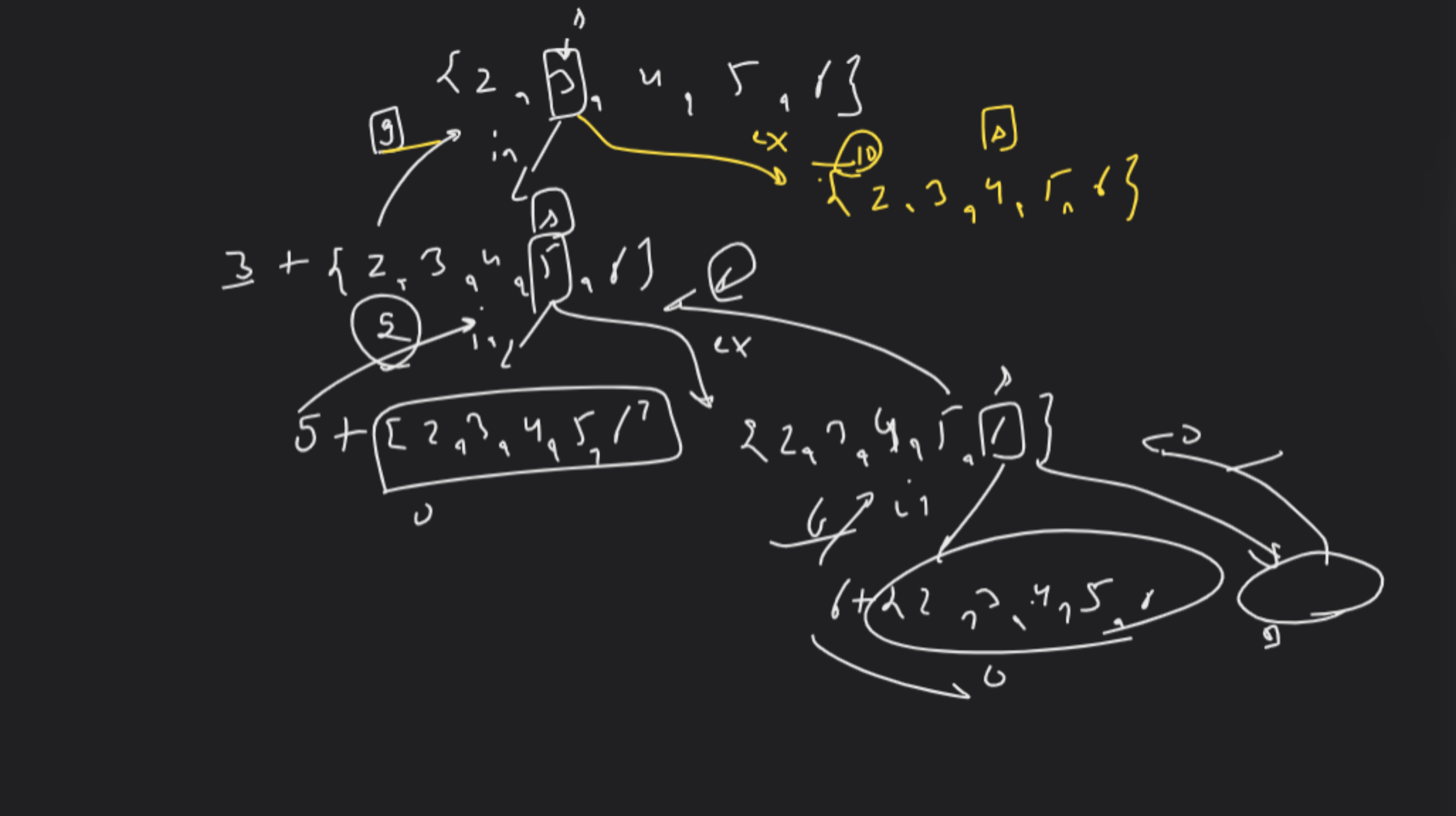


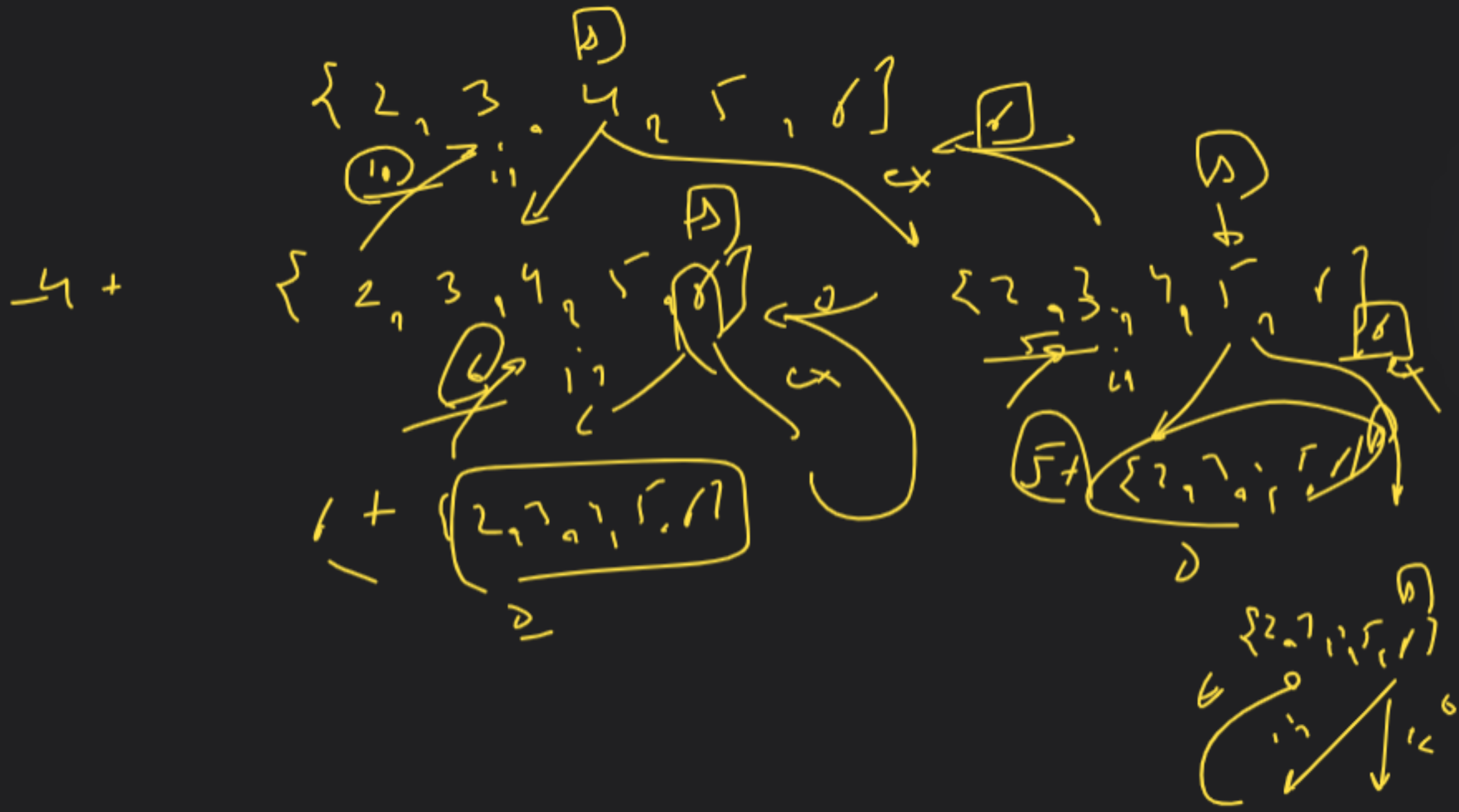


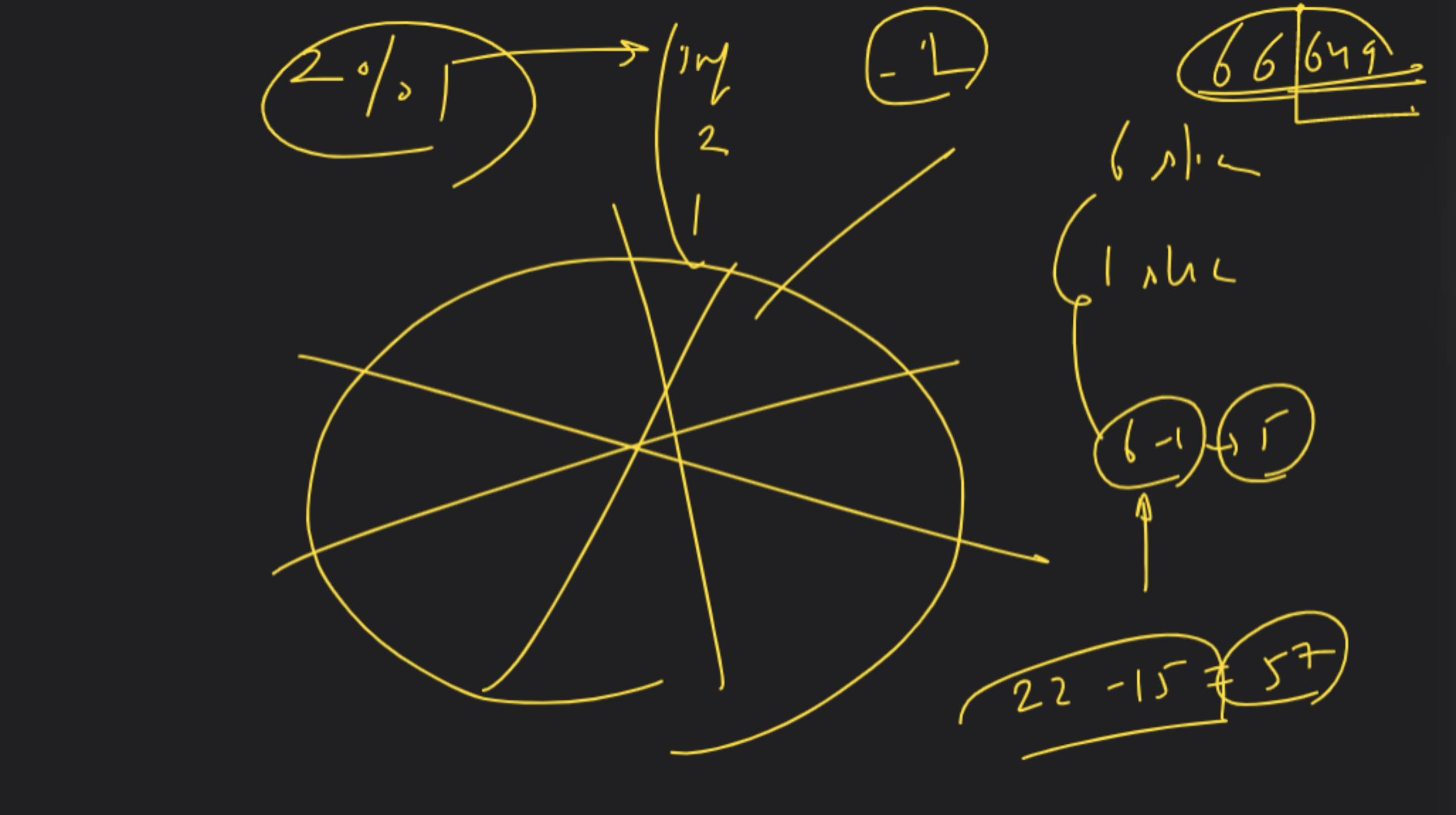
1 2 3 4 5
n==0
in
ex




pizza
int
include
= slice(s) + solu(s+2, n-1)
2-2 = 3000







int exclude = 0 + solve (ind+1, c, nm)

③ Max height by Stacking Cuboids → Longest Inc Subsequence

$C_1 \quad C_2 \quad C_3 \quad C_4 \quad C_5 \quad C_6 \quad C_7$

C_y
C_2 → cond^n

(12) pm

C_7
C_6
C_4
C_1

$h_1 + h_4 + h_1 + h_6$