



Greedy Algorithms

Special class

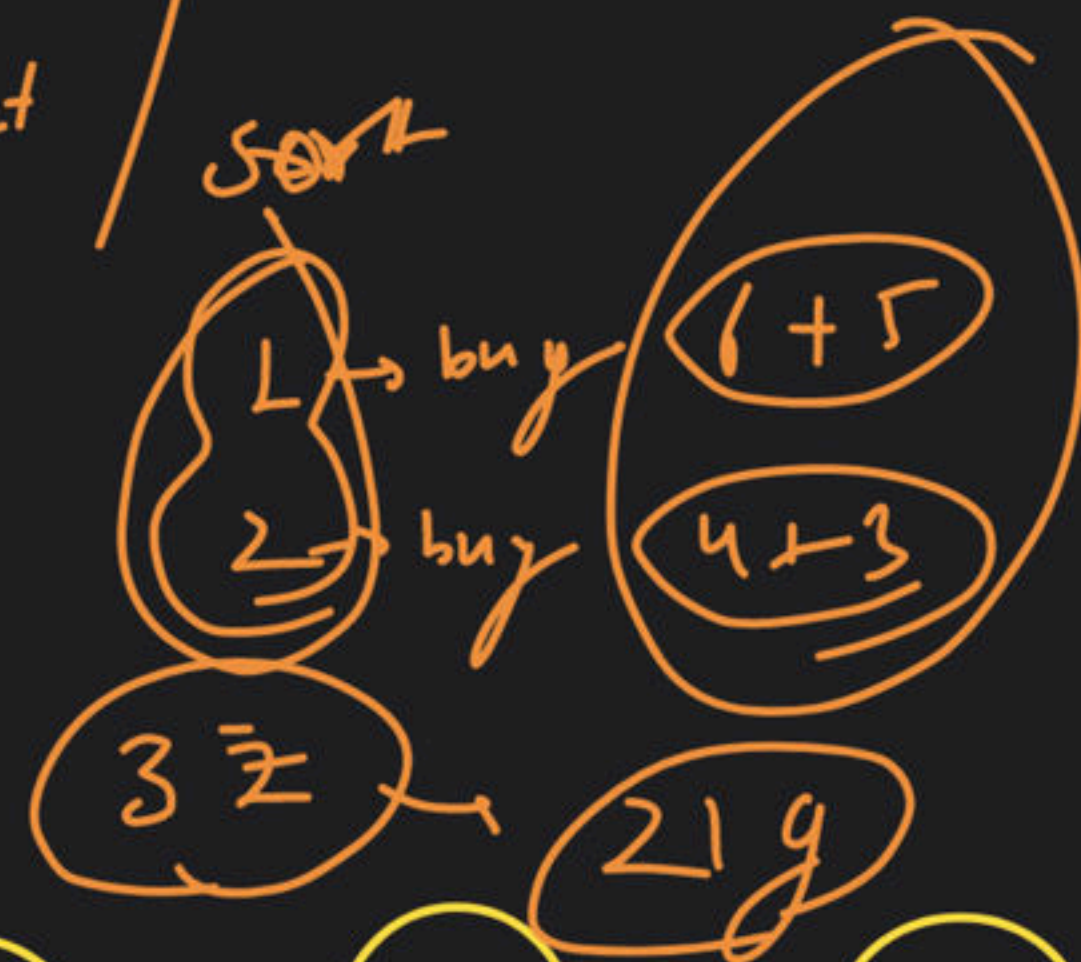
→ Greedy Algo:

PQ / Set / ~~Sort~~

$Q = 1$

gold coins

buy > free
→ not free



1
1E

5
5E

3
3E

2
2E

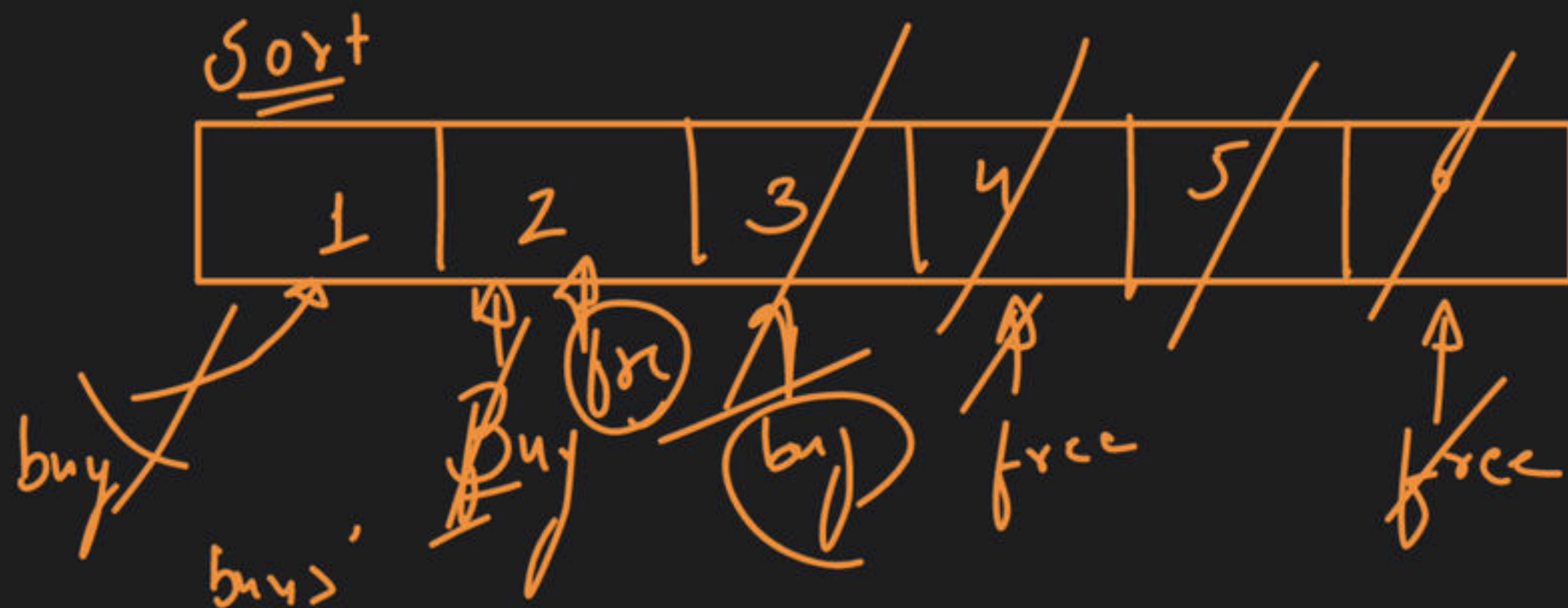
4
4E

6
6E

game

1 buy

2 free



→ Sort

→ Sort + cmp

→ minheap

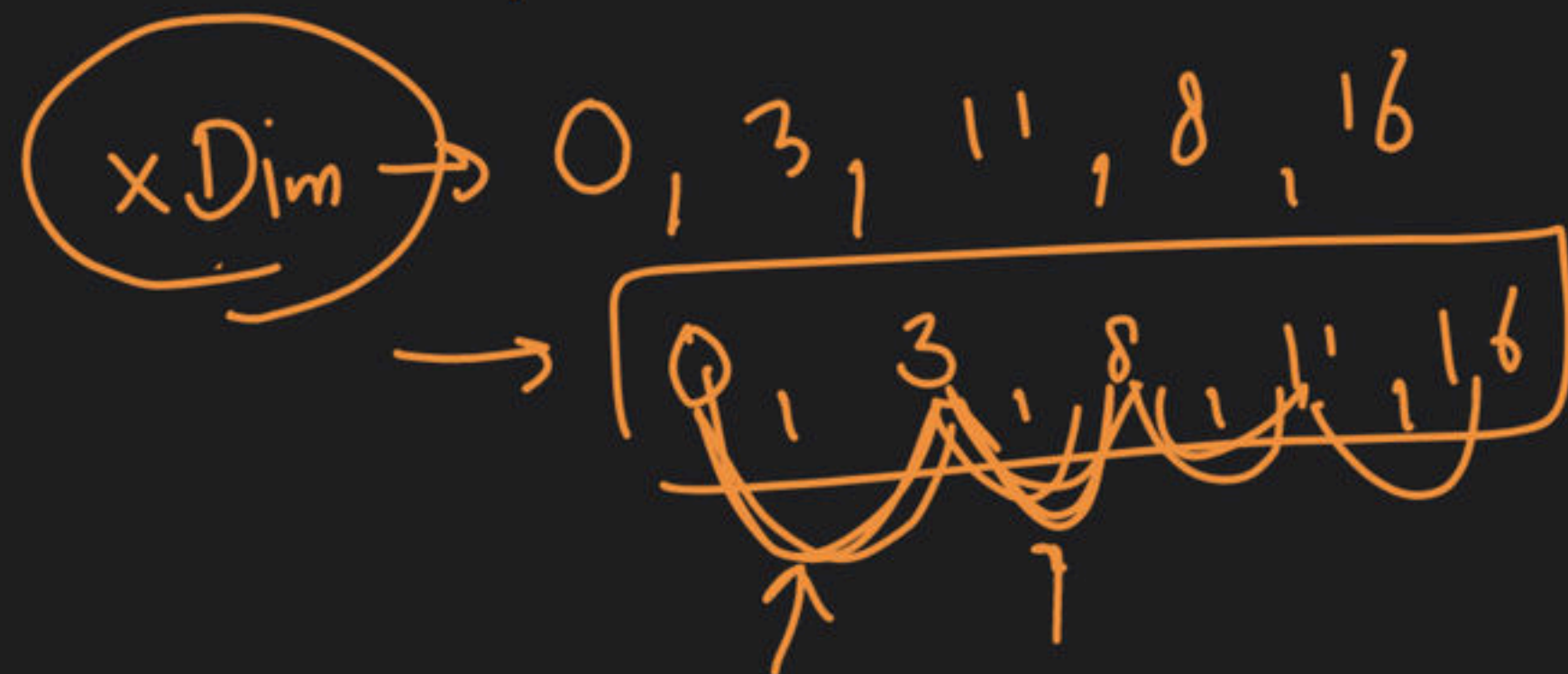
→ maxheap

→ set

→ DEFKIN

3-0-1

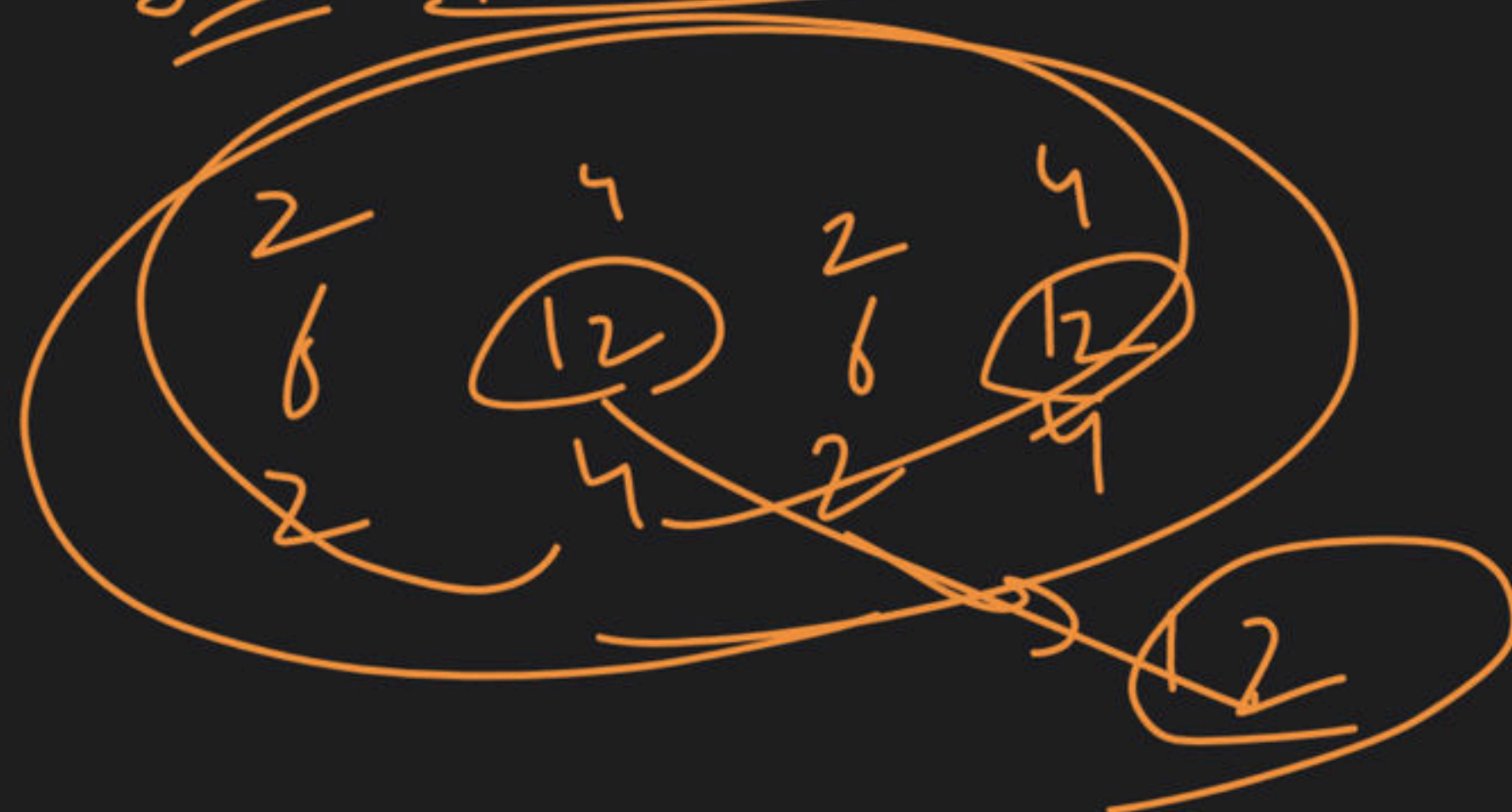
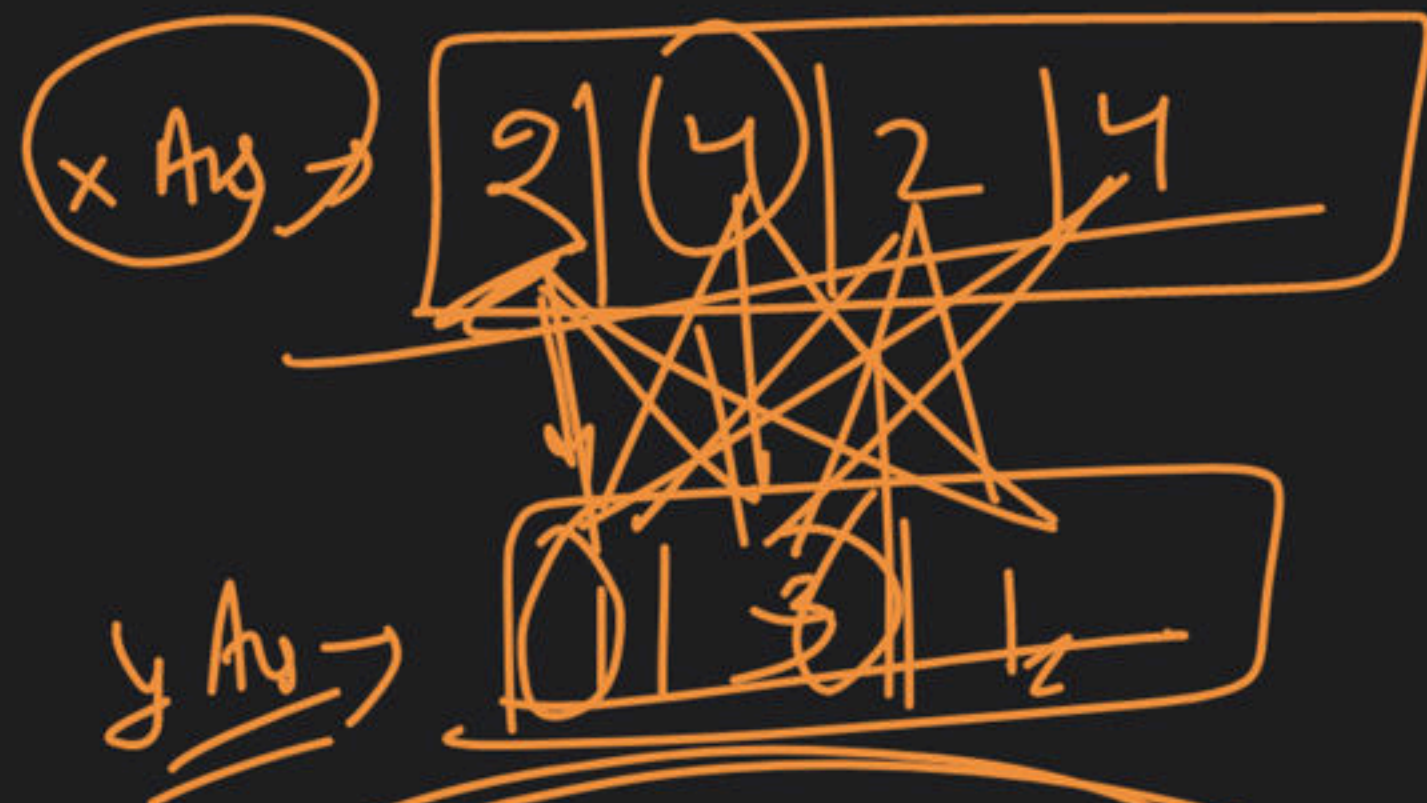
towns - x coord



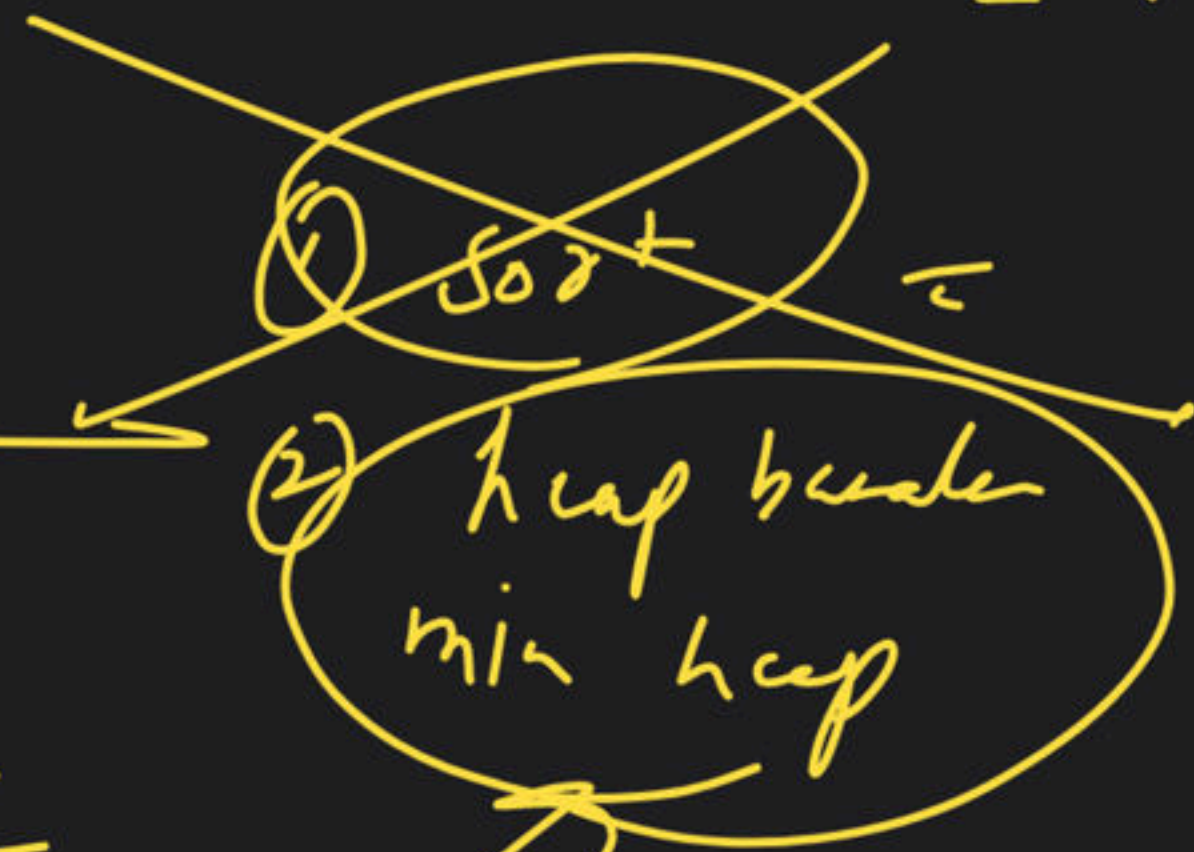
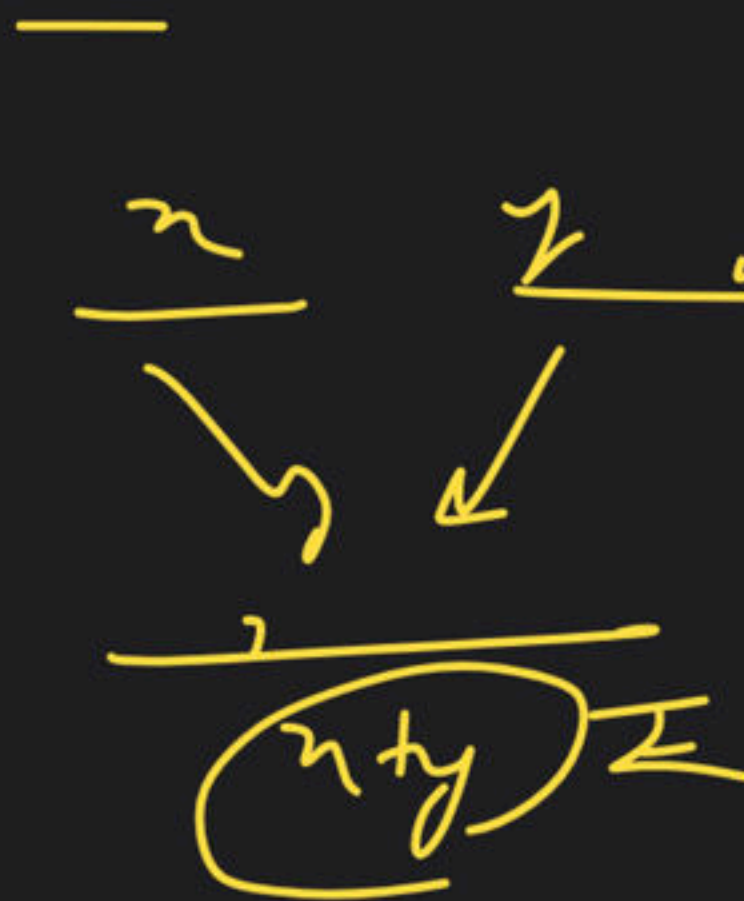
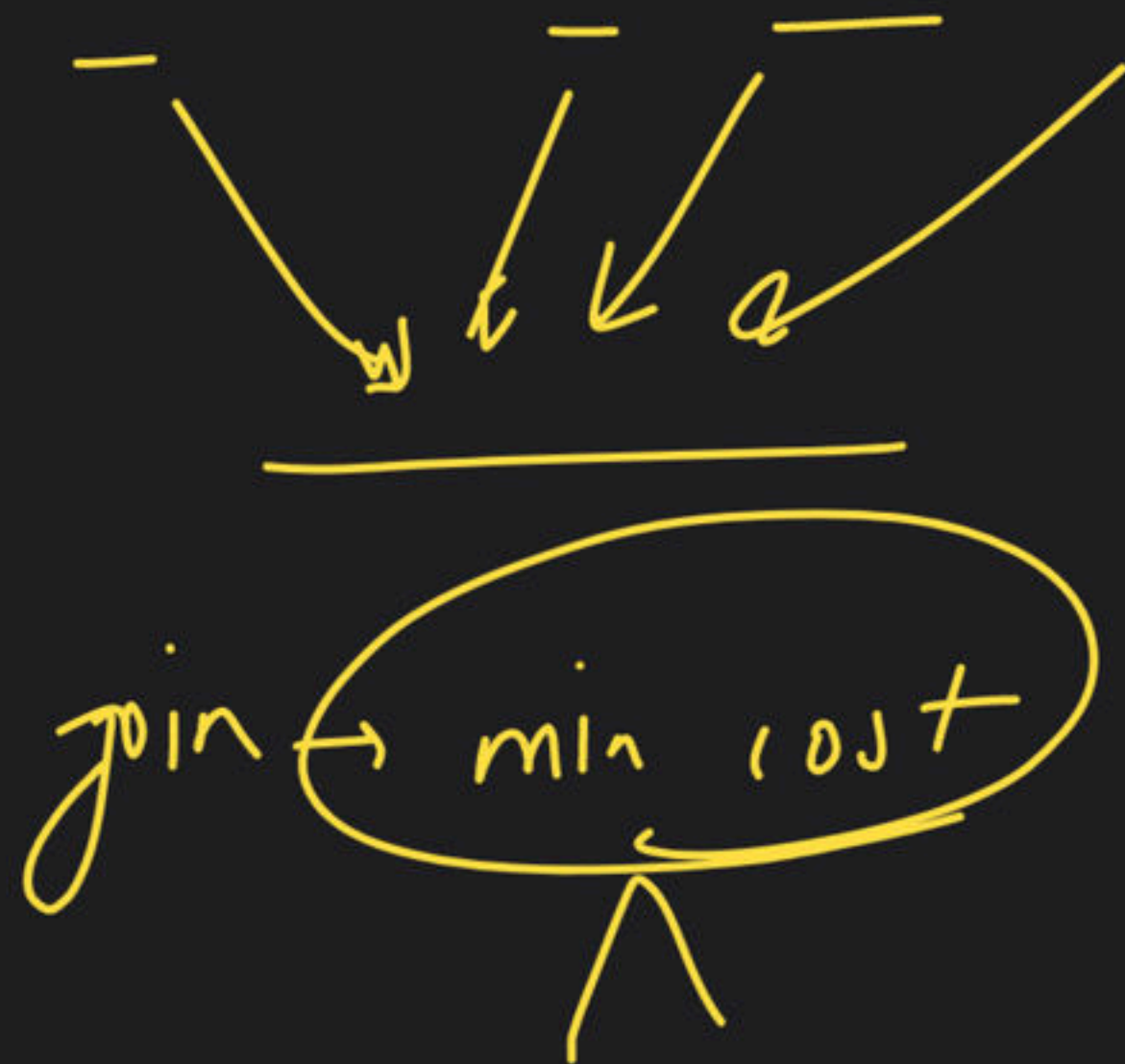
y Dim → 0, 8, 2, 1, 9



towns y - coord



→ Min Cost of ropes



[4, 3, 2, 1]

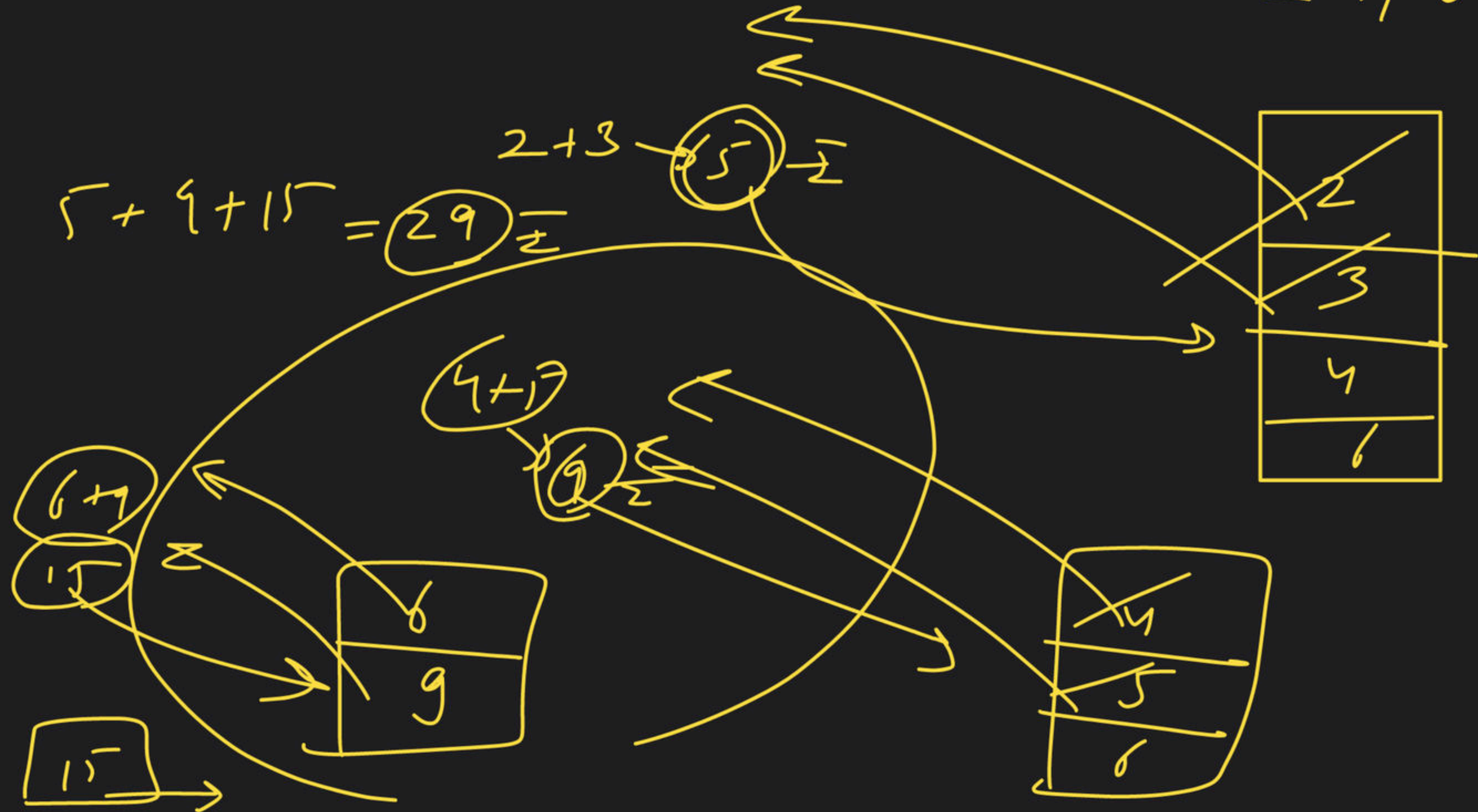
[2, 3, 4, 1]

[5, 4, 1]

[4, 5, 1]

min heap

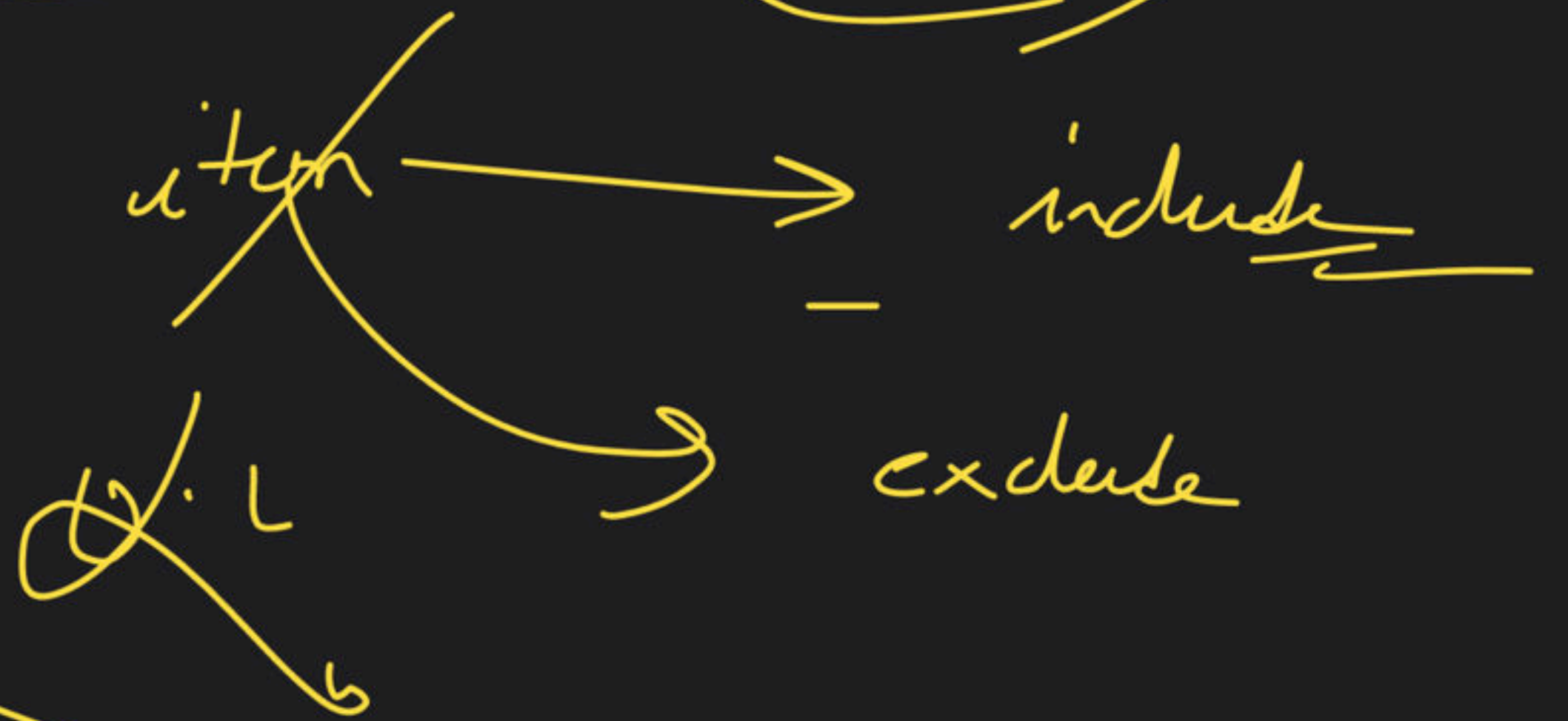
[4, 3, 2, 6]





0/1 Knapsack

DP



fractional Knapsack

val

60 g Protein	100 g Protein	120 g Protein
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wt →

10 kg Wheat	20 kg Paneer	30 kg Kaju
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1 kg

60
10
6

100
20
5

120
30
4

50%

50%

val →

60	100	120
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wt →

10	20	30
----	----	----

N=3

W=50

60 + 100 + 80

240

10 kg
Wheat

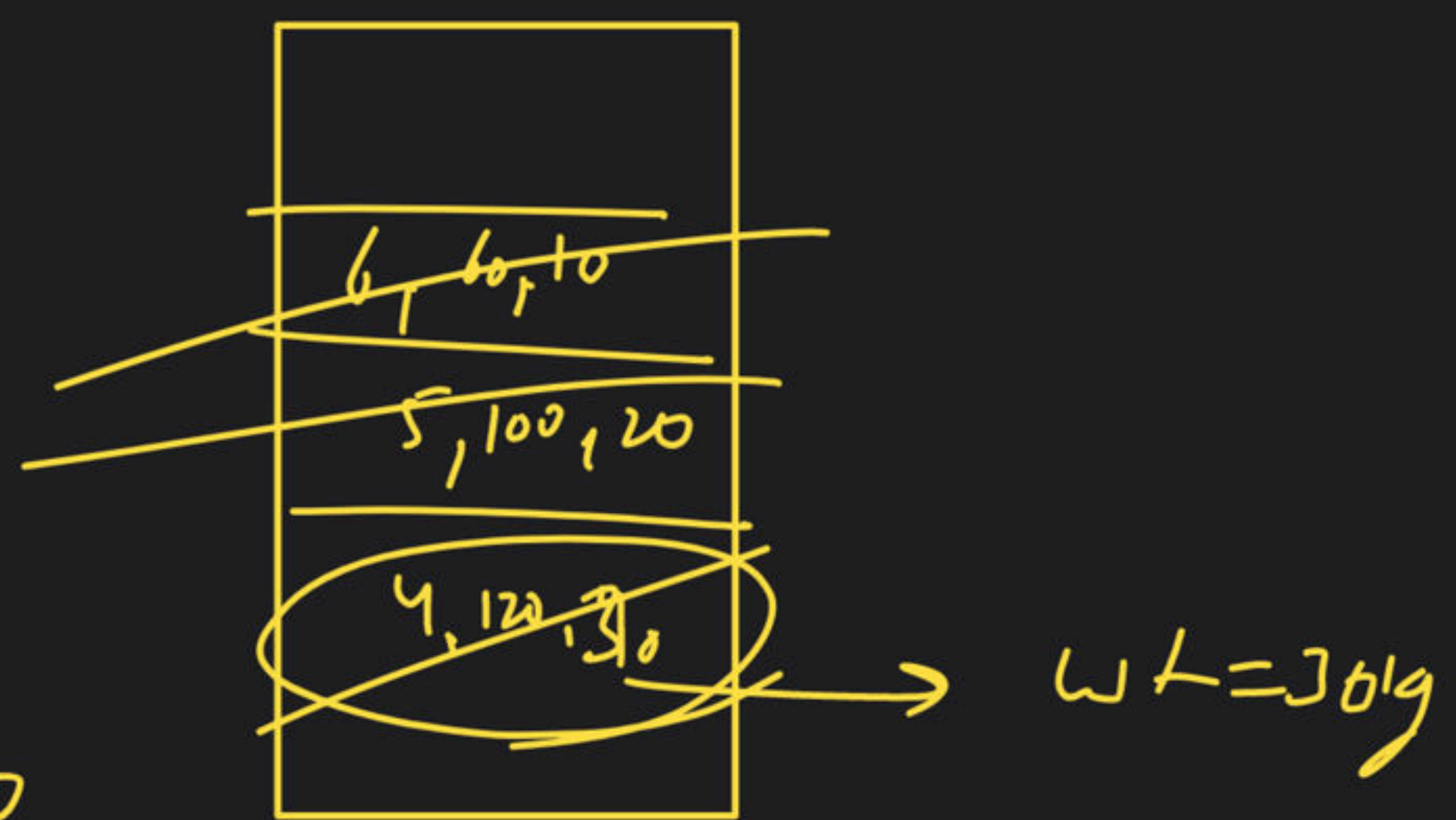
20 kg
Paneer

20 kg
Kaju

val \rightarrow 60, 100, 120
 wt \rightarrow 10, 20, 30

$\frac{\text{val}}{\text{wt}} \rightarrow$ 6, 5, 4

$$AV = 0 + \frac{60 + 100 + 80}{3} = 240$$



Capacity = 201g

$\frac{120}{30} \times 20 = 80$

→ N-meeting in a Room

end time → sort
↓

N=6

start →

end →

1	3	0	5	8	5
2	4	1	7	9	9

already inc

st →
end →

st > end prev

i / 1 inch



→ Chocolate distribution Problem

Copy

H/W

Huffman Encoding

