

Binary Search Trees Class-2

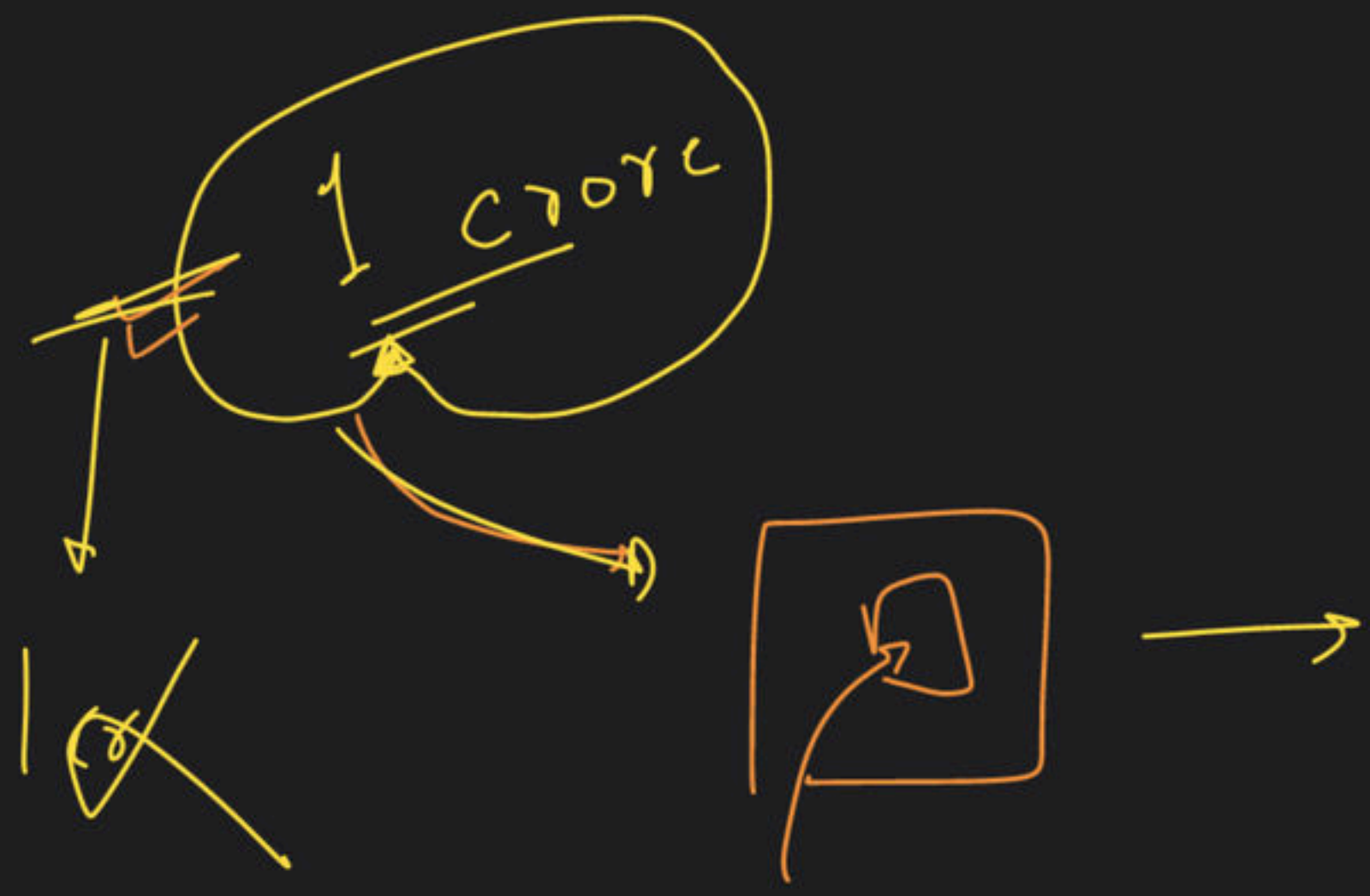
Special class

SUPRA



LD

3da y^a



⇒

BST ⇒

inorder

create ?

BST

Balance

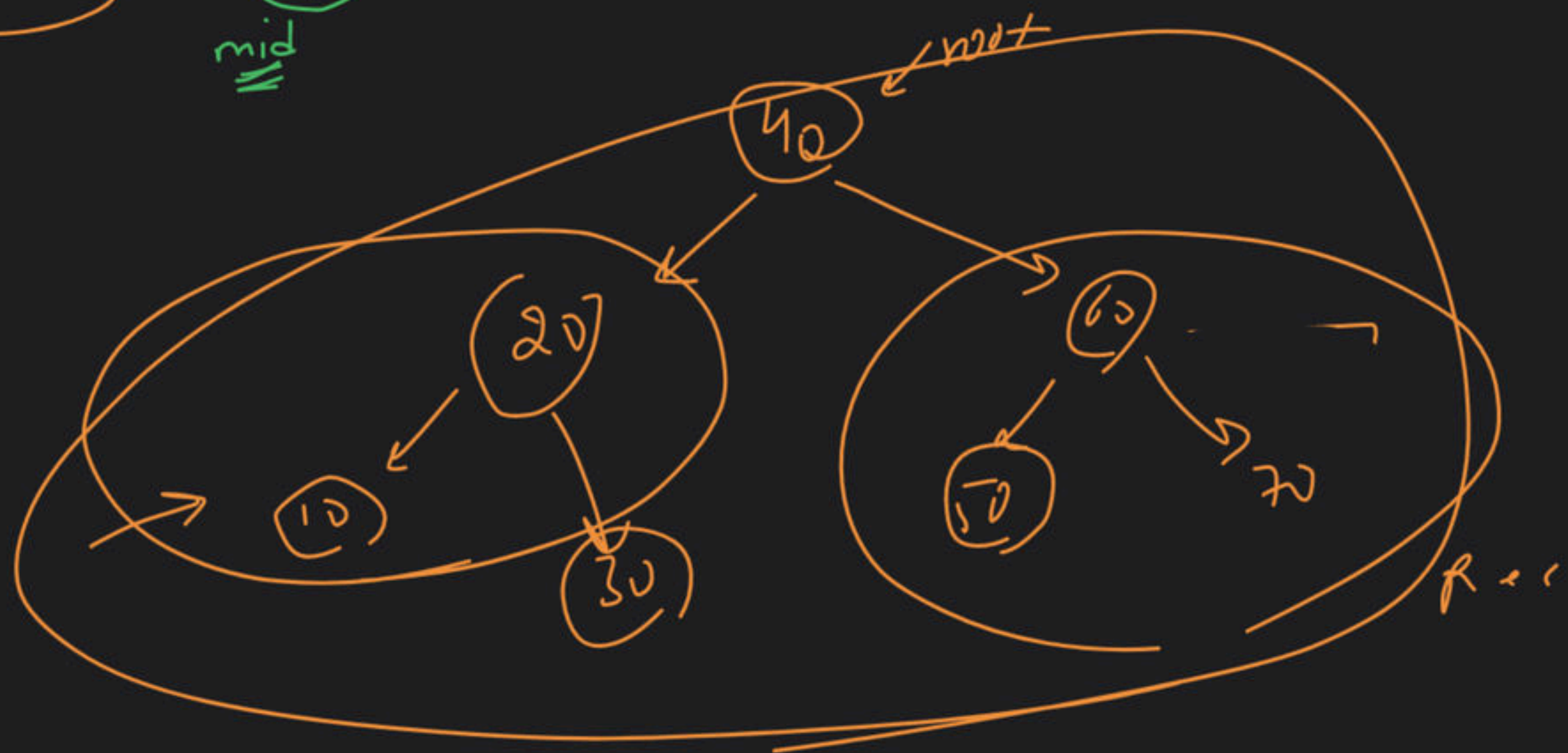
16m

inorder →

10 | 20 | 30 | 40 | 50 | 60 | 70

mid

R-L

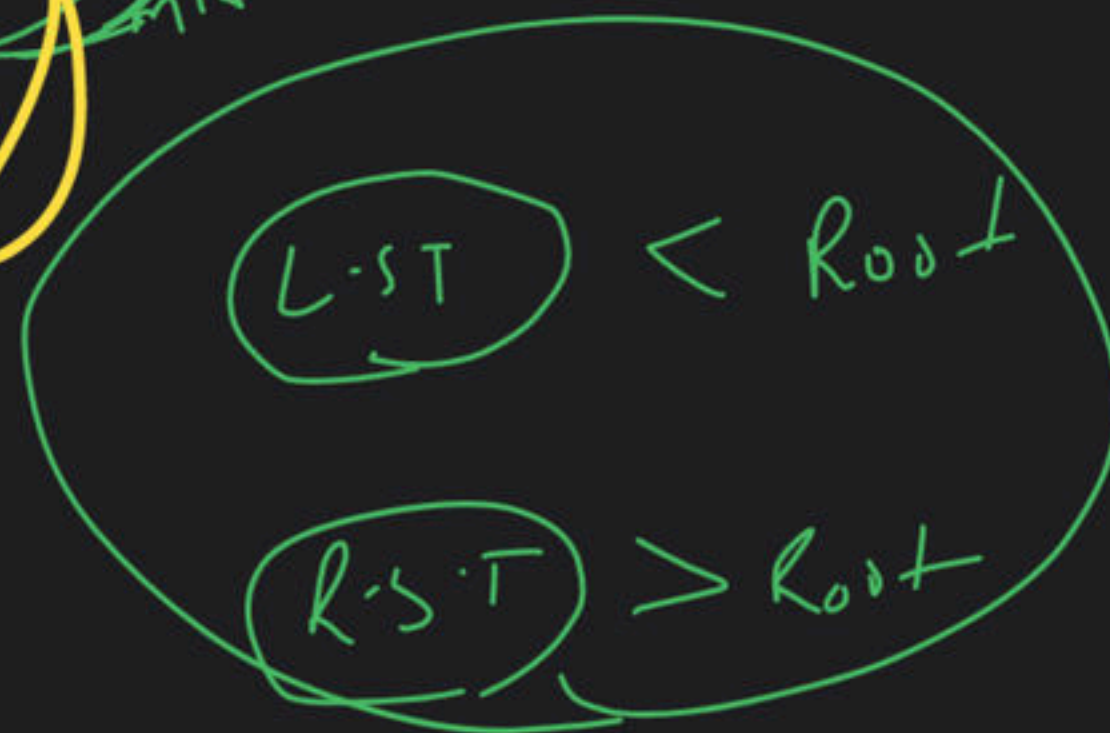


BST → ?

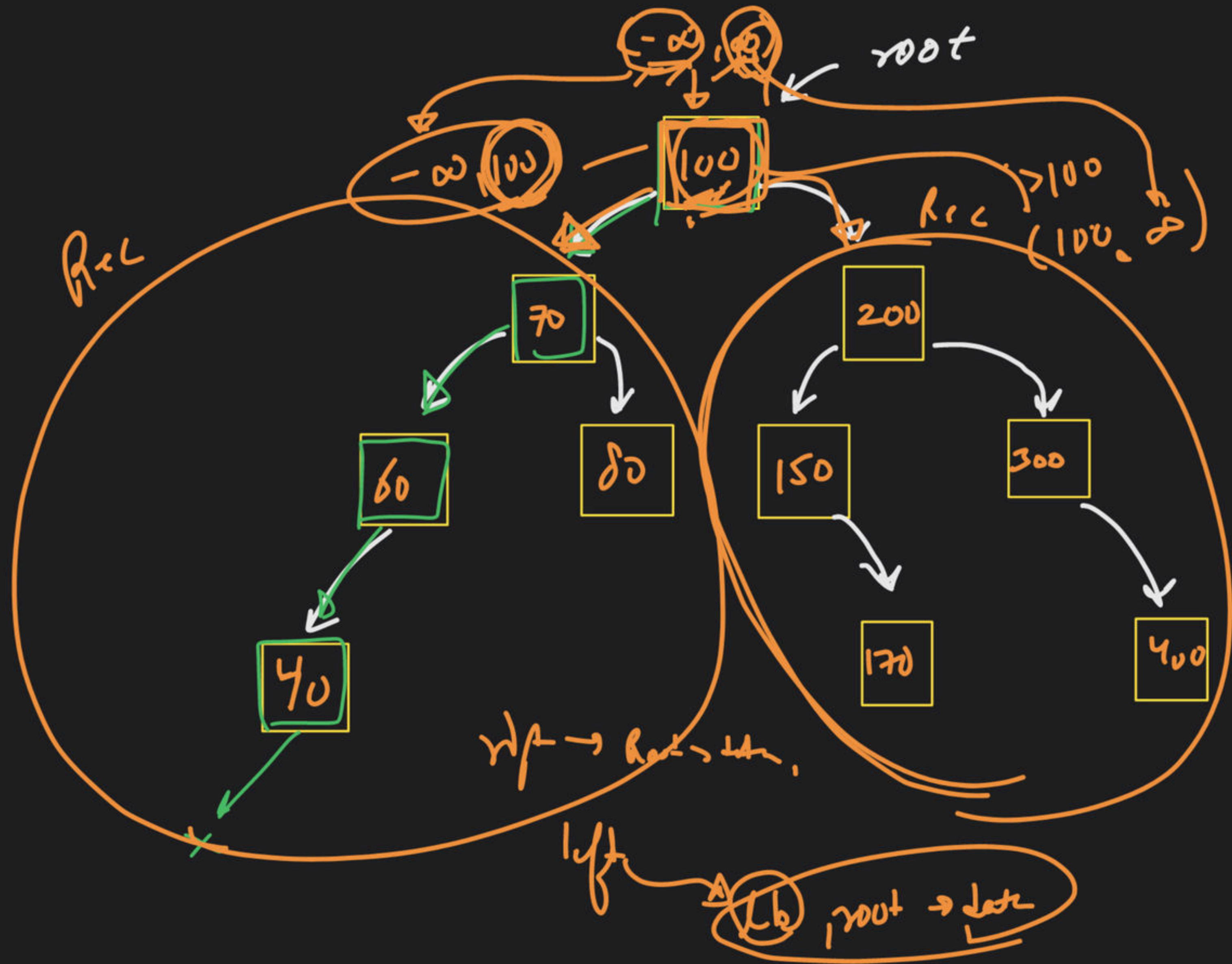
max min
↑ ↑
int qin



for any node



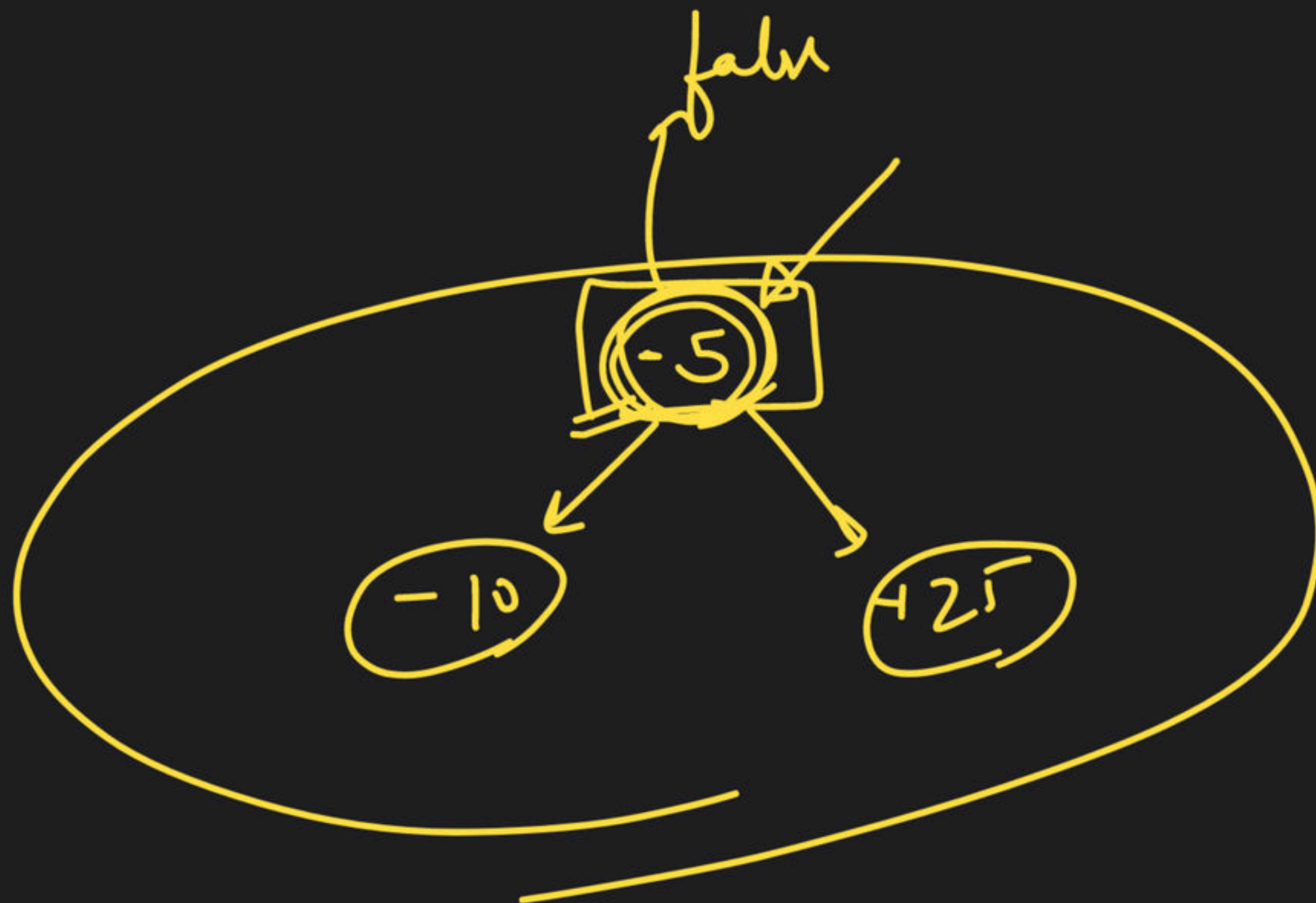
T/F



Inorder
LNR

$100 > -\infty$
 & &
 $100 < \infty$
 & &
 $left = T$
 & &
 $right = T$

True

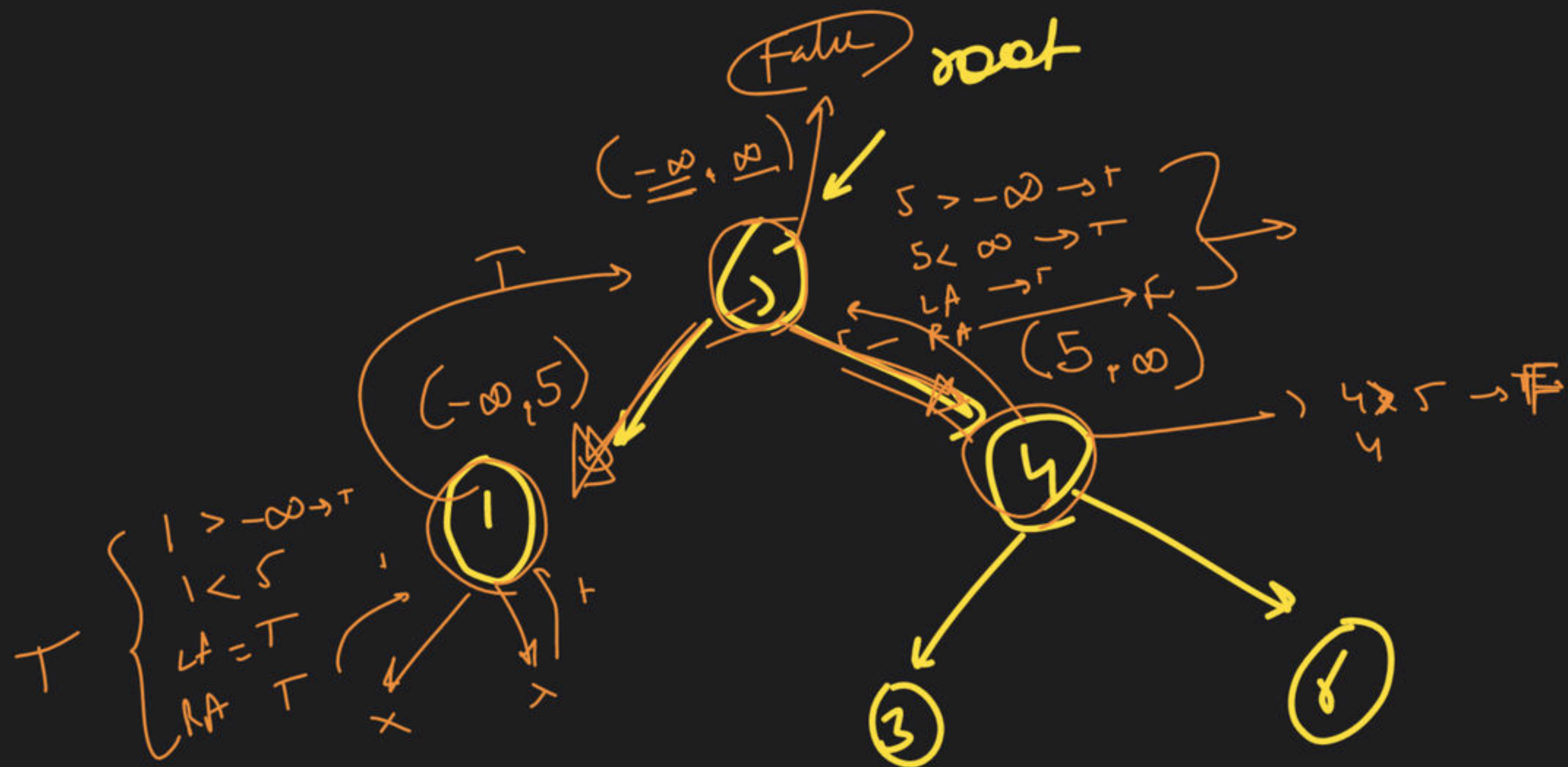


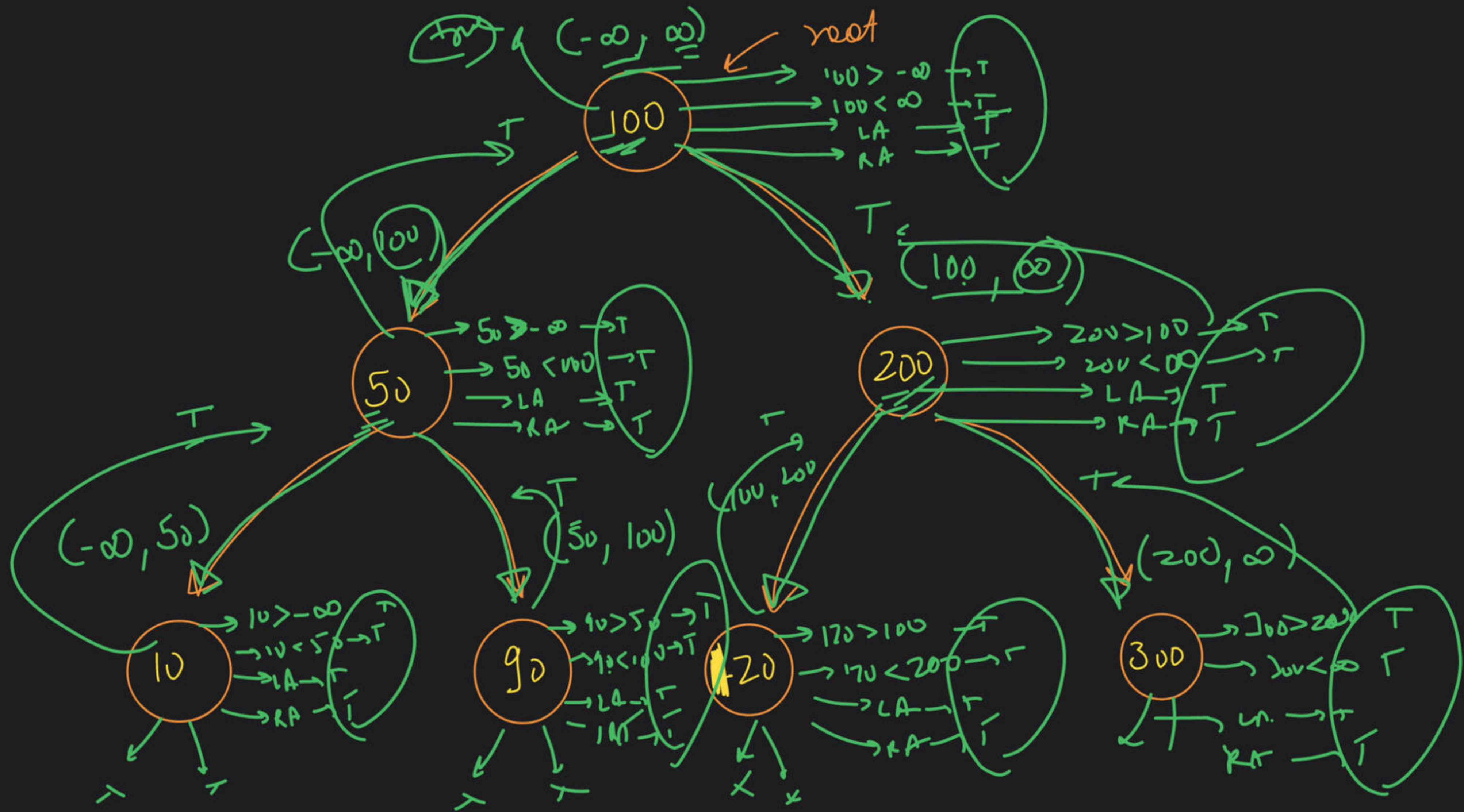
→ INT_MIN
return ↓

$-\infty$ -6

$-5 > -5$
→ ~~false~~

$>$
 $<$ → false





→ LCA of BST

LNK
includes tree

root

$K = 3$

$P = 30$
 $Q = 70$



50
LNK
 $K = 1$

100
LNK

200
VI

30
LNK
 $K = 2$
P

70
LNK
 $K = 0$

120
V

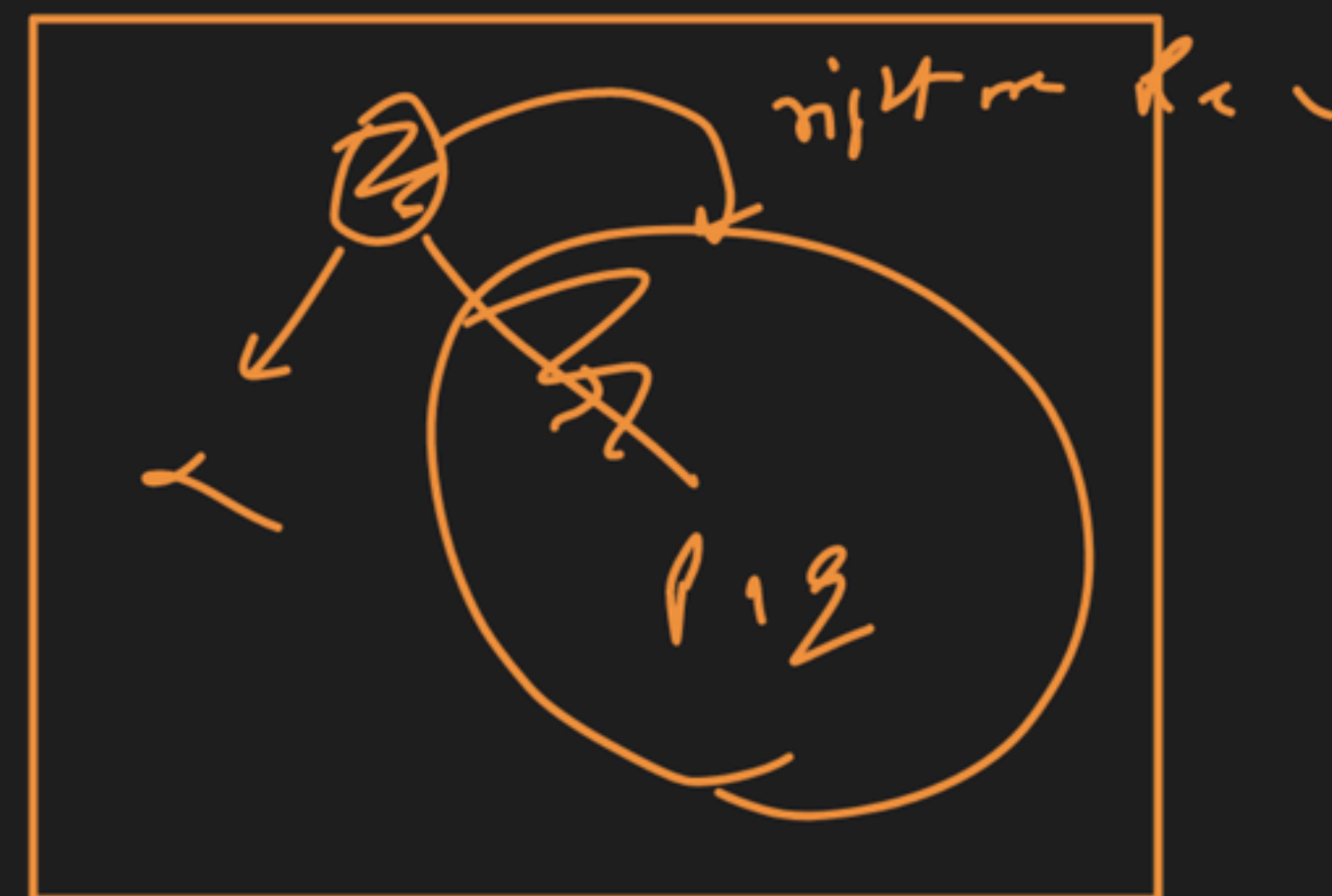
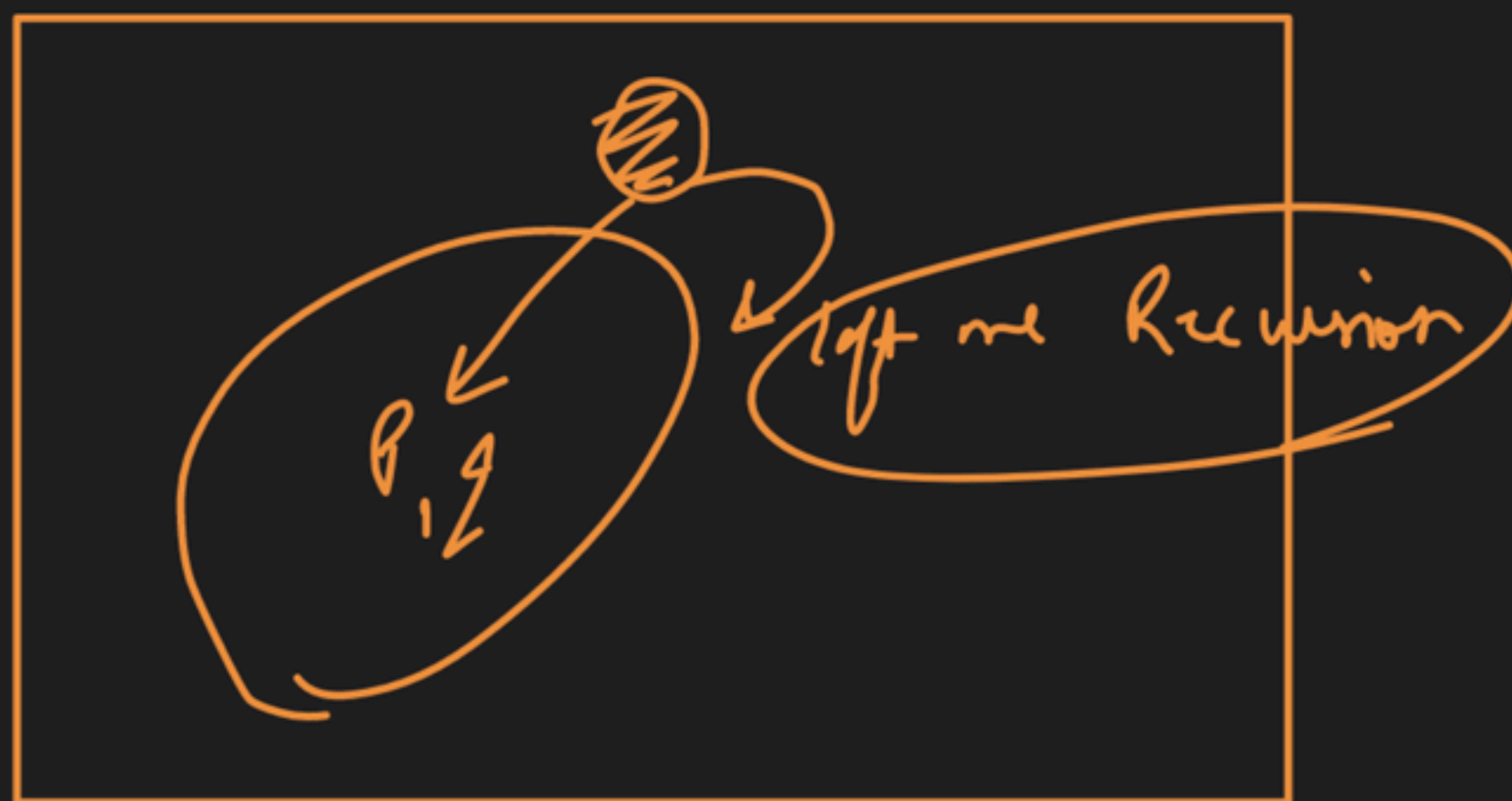
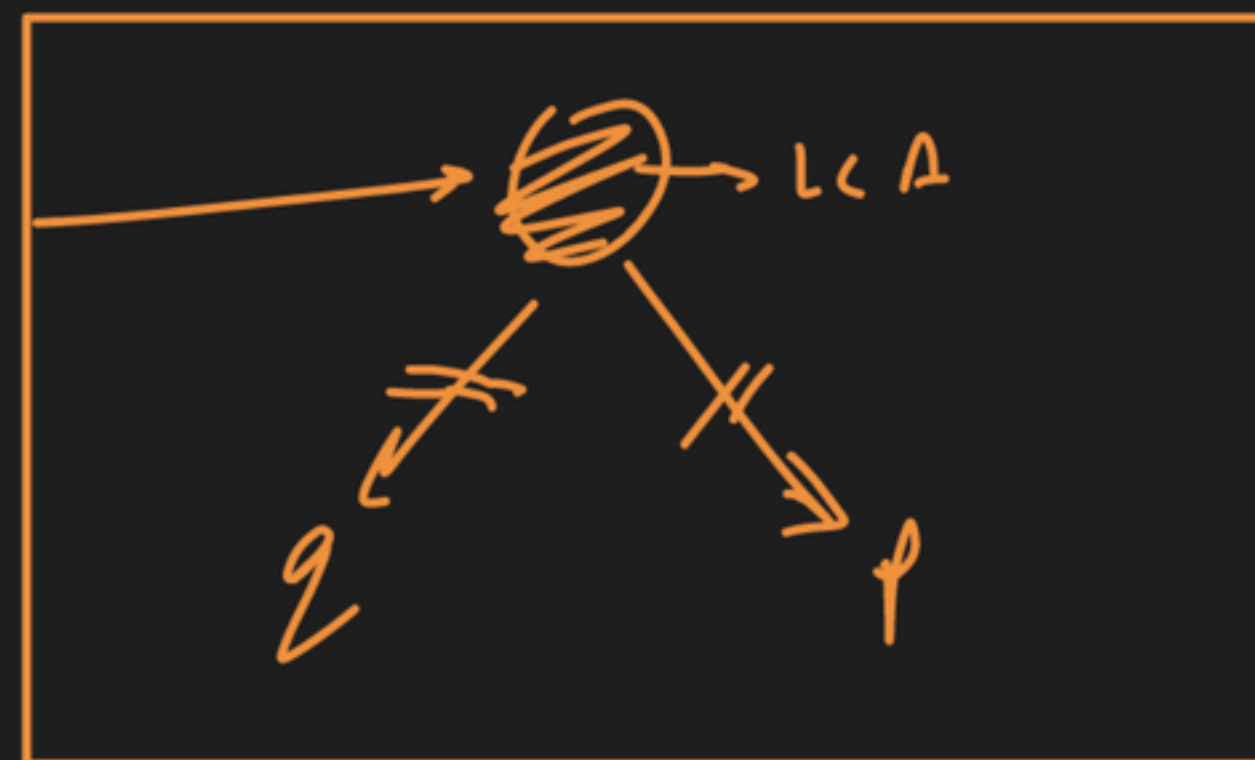
300
VII

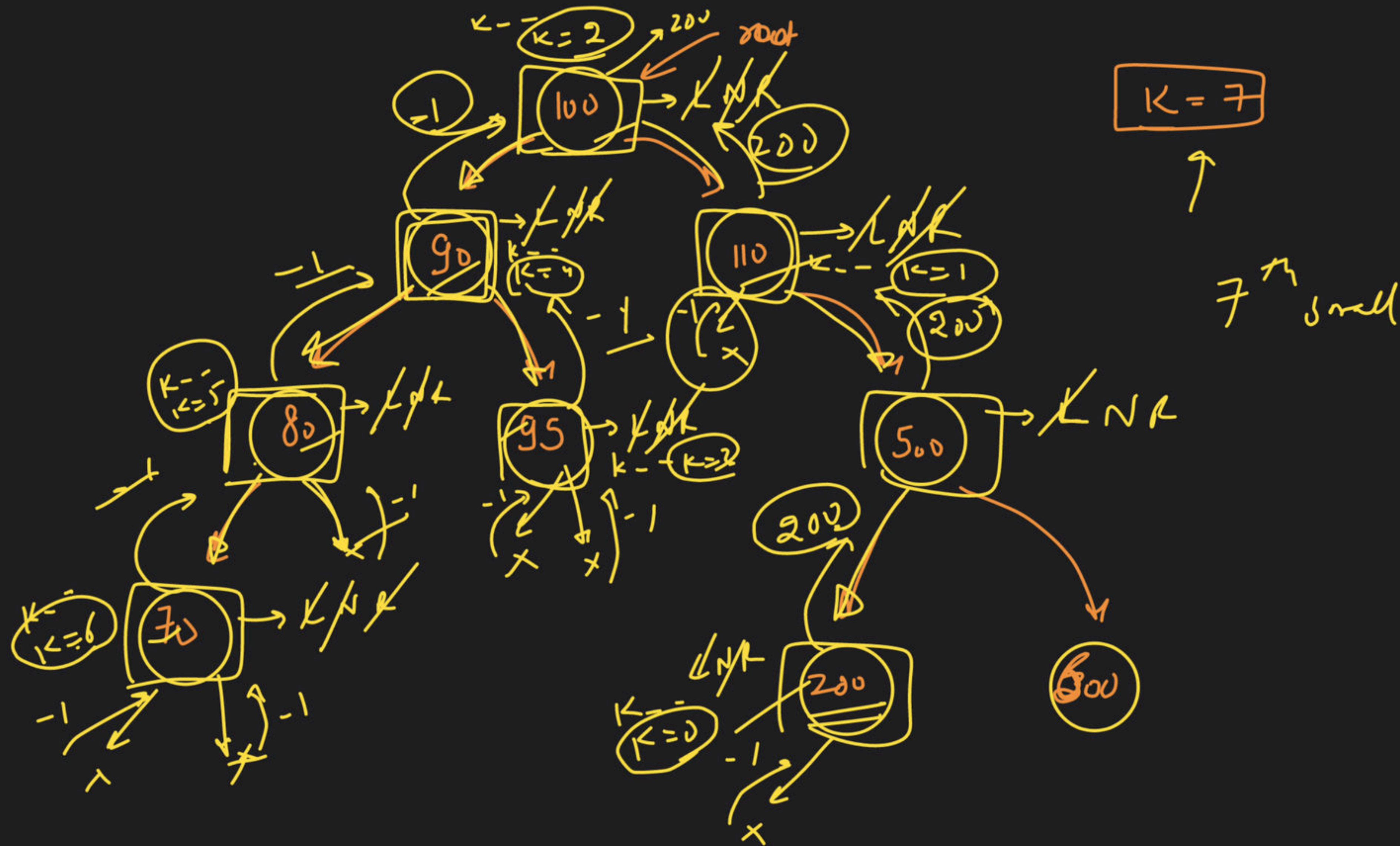
K^{th} smallest

VII

J

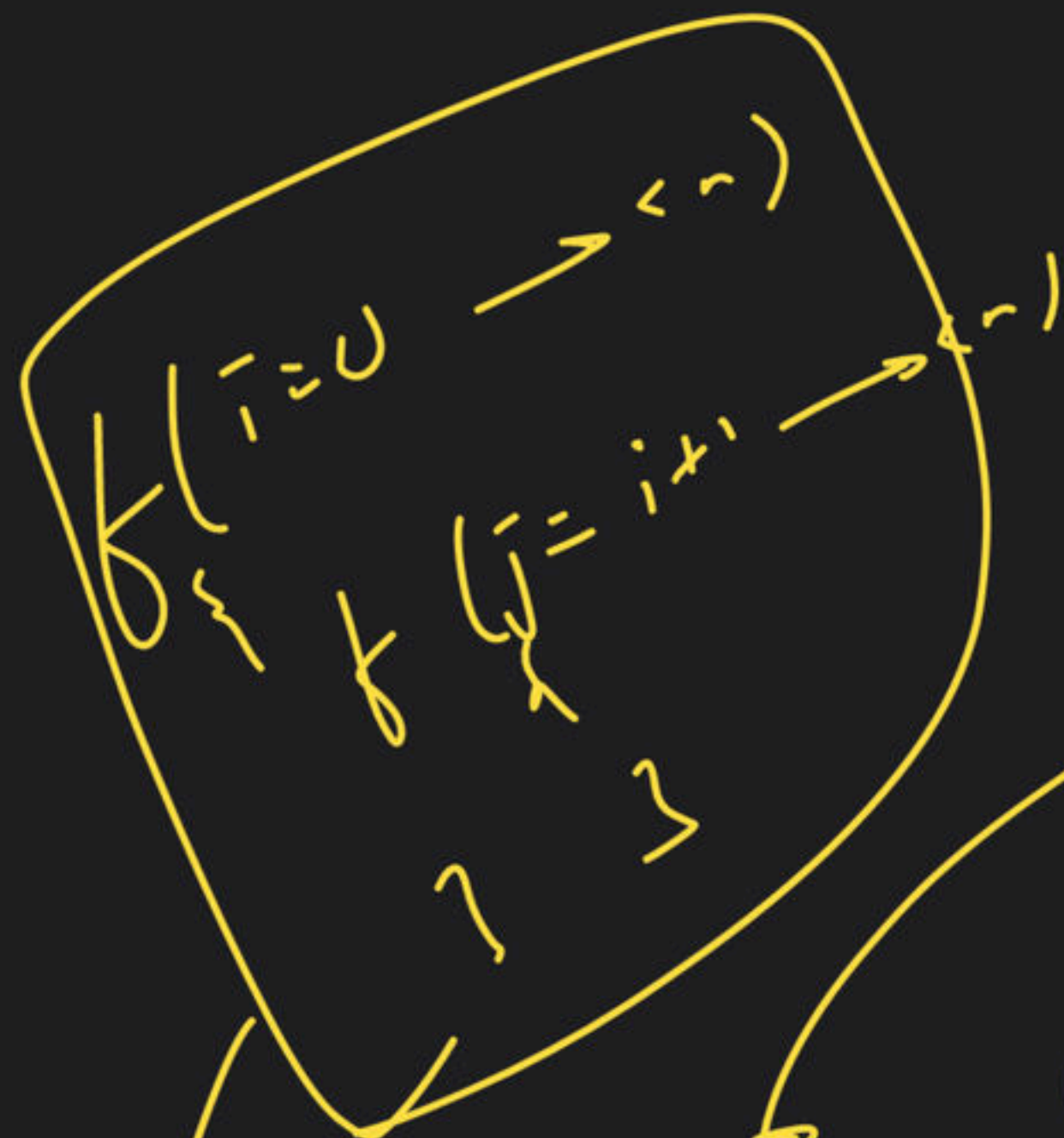
(2)
 $K = 1$





10	20	5	15	30
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array



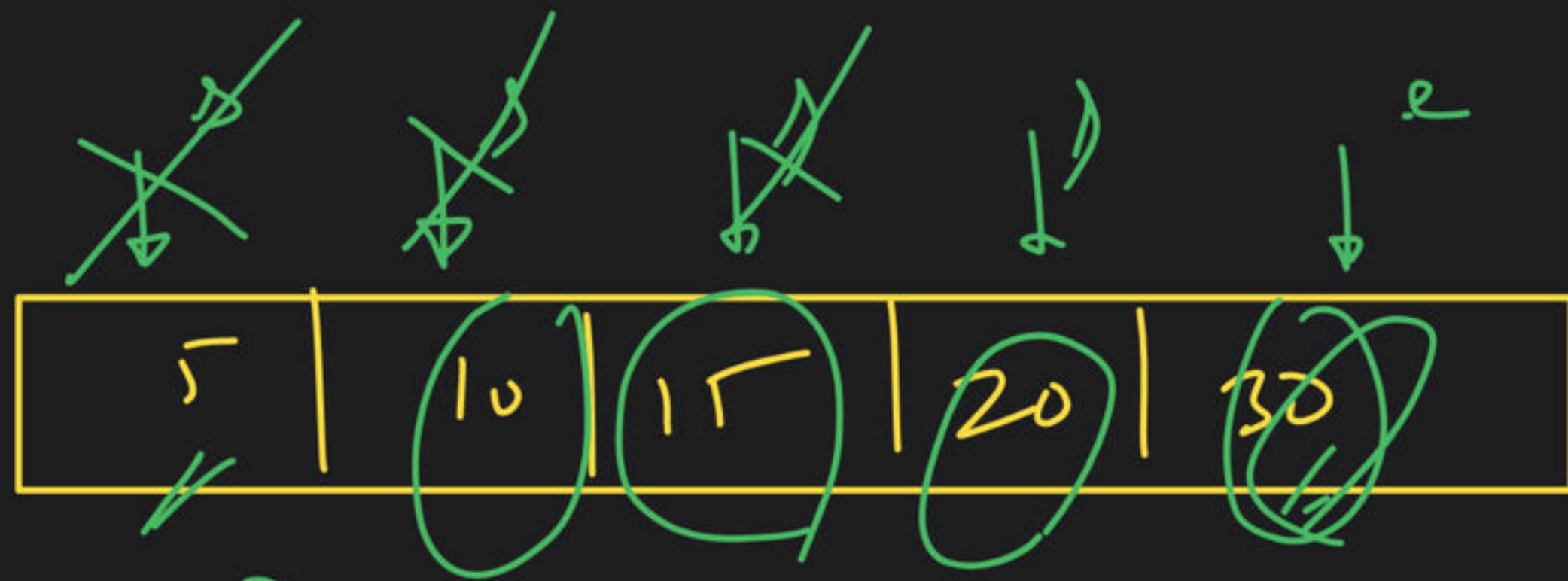
- $(10, 20)$ $(20, 5)$ $(5, 15)$ $(15, 30)$
 $(10, 5)$ $(20, 15)$ $(5, 30)$
 $(10, 15)$ $(20, 30)$
 $(10, 30)$

$O(n^2)$

BSI

inorder
sort

$\frac{O(n)}{O(n)}$



$O(n)$

target = ~~55~~
~~50~~
 $2 + 30$
 $2(50)$

$$30 + 5 = 35 < 50$$

^
↑
++

$$10 + 30 = 40 < 50$$

$$15 + 30 = 45 < 50$$

↑
++





























