

Advanced DSA

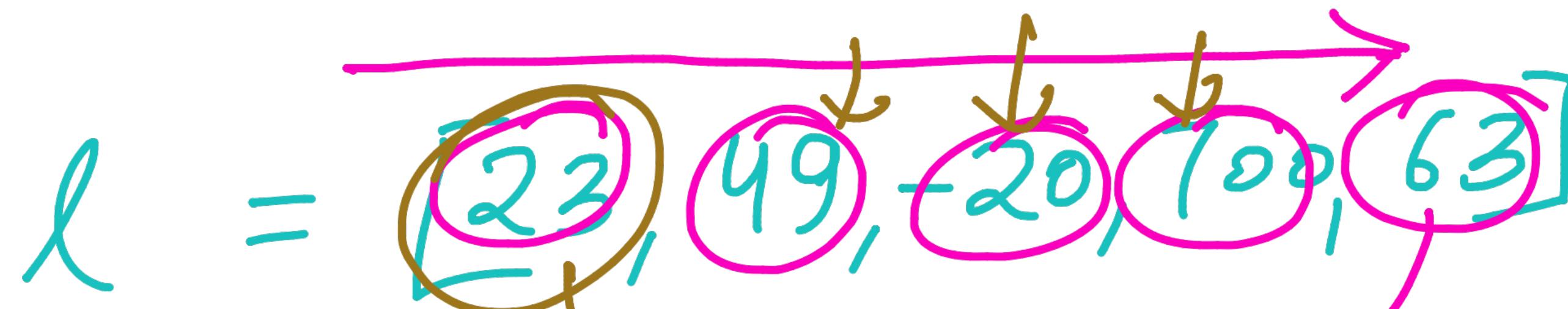
$l = [23, -3, 67, 45]$

findnumber = 67

for no in l:

if no == findnumber:
print("found")
break

OK



findnumber = 63
Worst Case

findnumber = 23
Best Case

Binary Search

$l = [63, -2, 4, 7, 72, 2, 20, 10]$

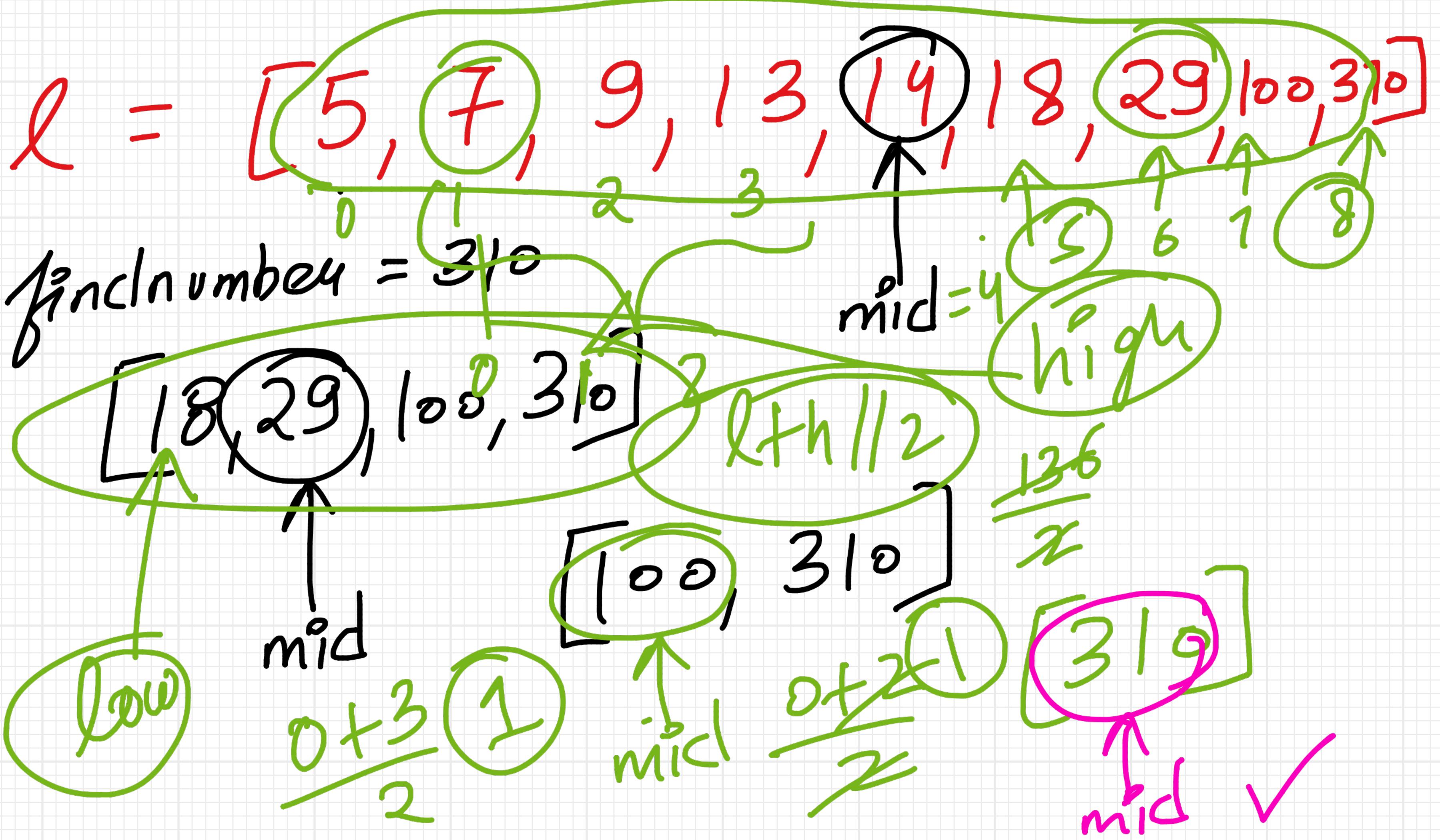
$l' = [-2, 2, 4, 7, 10, 20, 63, 72]$

findnumber = 2

mid

[-2, 2, 4]





Rebeation

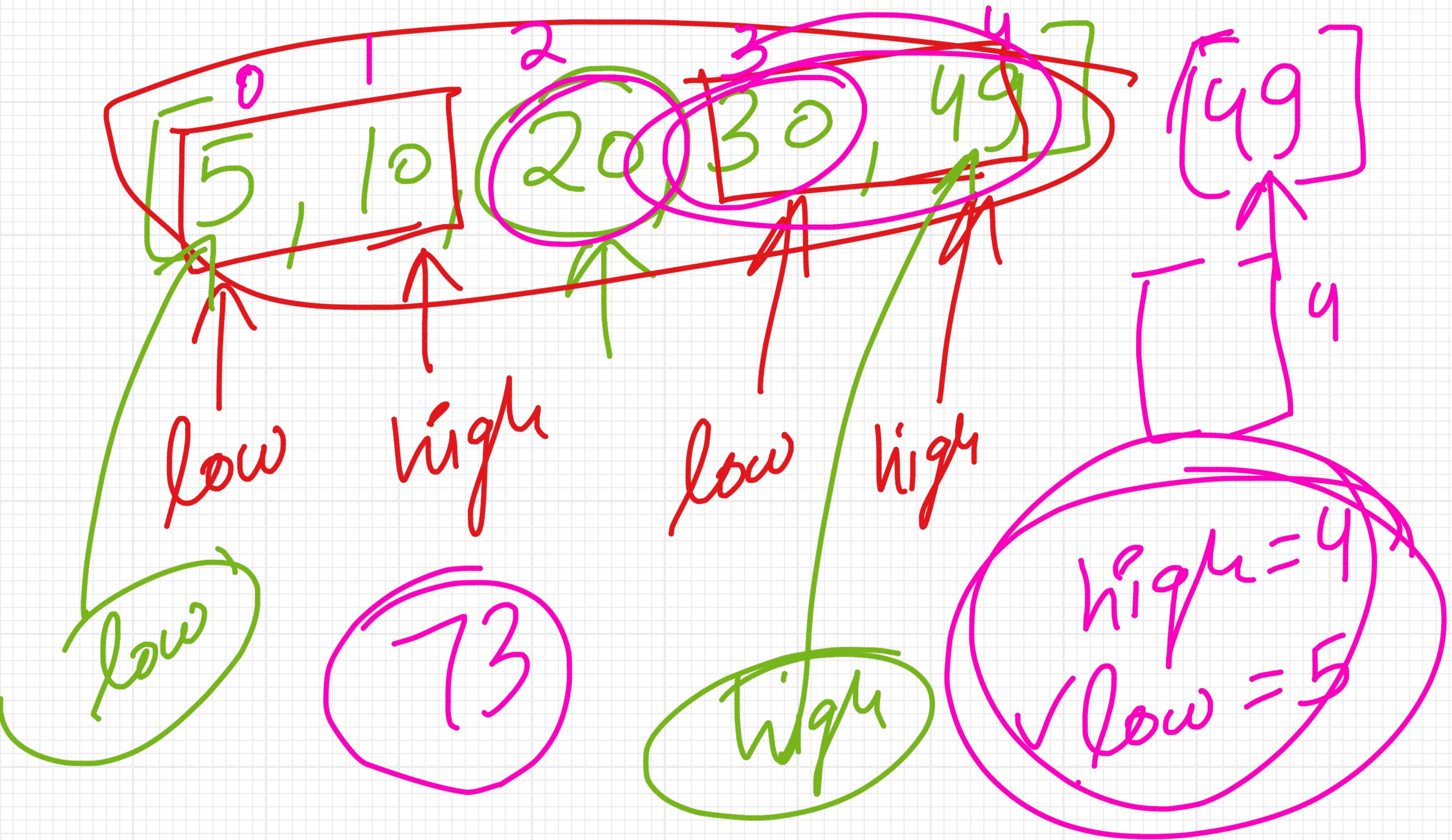
→ List

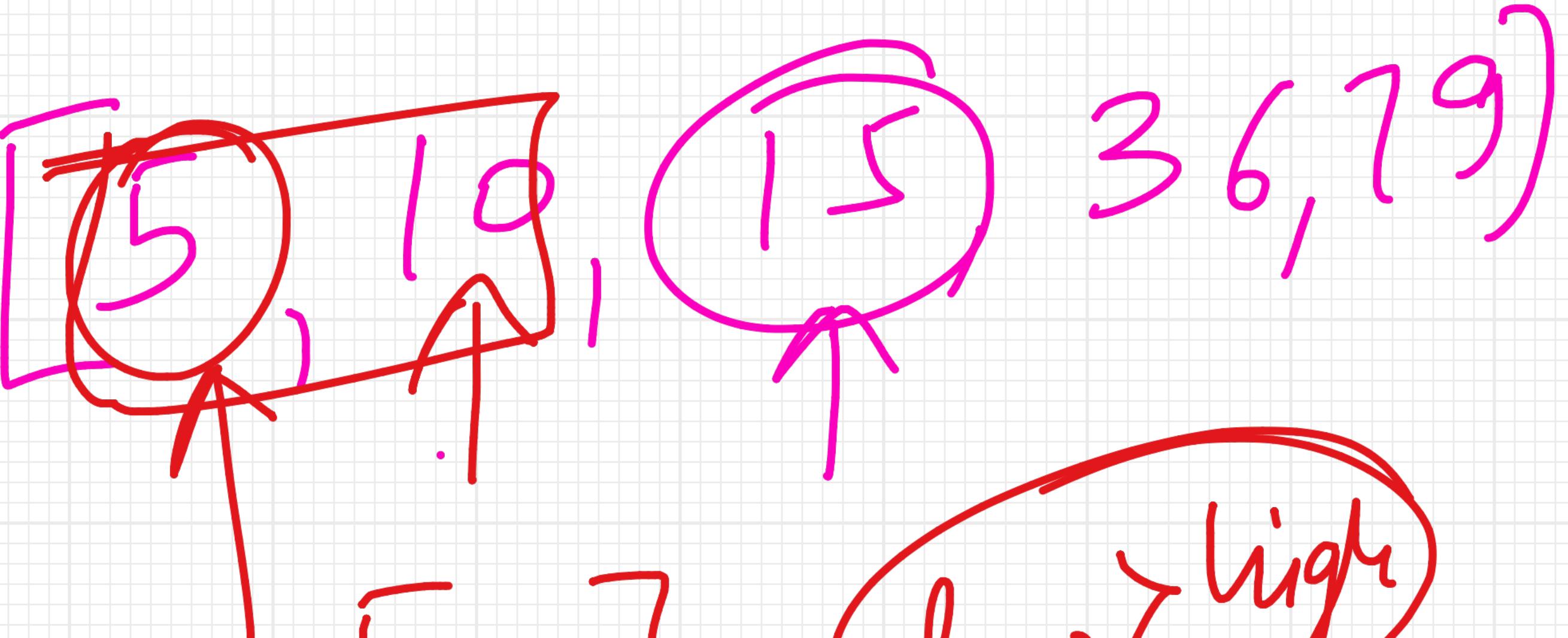
→ Mid ✓

→ Mid == findnumber ✓

else

List





f = 3

[]

low = 0
high = 0

10^9

elements

Linear Search

(10^9)

Binary Search

$O(\log n)$

~~$O(\log_{1.0} 10^9)$~~

$$l = [33, 29, -5, 6, 73, 26]$$

$$\text{Sorted}(l) = [-5, 6, 26, 29, 33, 73]$$

$$\begin{aligned} \text{Sorted}(l, \text{reverse} &= \text{True}) \\ &= [73, 33, 29, 26, 6, \\ &\quad -5] \end{aligned}$$