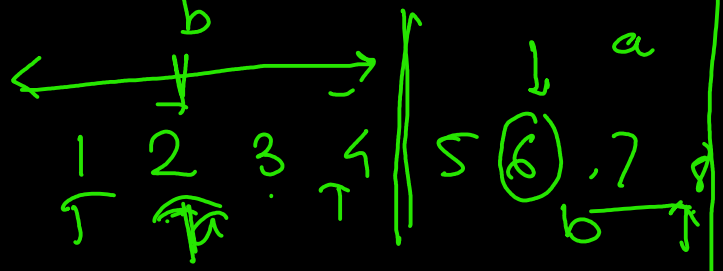
$O(\sqrt{n})$ → `for( i=2 ; i*i<=n; i++){` `}` →

$N = a * b$, $a \le b$ → $\sqrt{N}$.



$N = a * b = \sqrt{N} \cdot \sqrt{N}$

$5 * 6 = 30$

$N = a * b = \sqrt{N}$

$10^7, 10^8$ - $N \le 10^{12}$

for(2 - n) $\sqrt{n}$

Move Zero

→ {0, 1, 0, 3, 12}

{1, 3, 12, 0, 0} → output →

two ptrs :

1) sorted Array
2) Array modify
3) find k Sum

{0, 0, 1, 2, 3, 0, 0}

→ {1, 12, 0, 0, 0} → {0, 0, 0, 1, 1}

→ {0, 0, 1, 2, 3, 0, 0}

→ {1, 2, 3, 0, 0, 0, 0} →

New Arr 1 → {1, 2, 3} ✓ → (1) ←

→ New ARR 2 → {0, 0, 0, 0} →

{1, 2, 3, 0, 0, 0, 0}

= {0, 1, 2, 3, 0, 0, 5, 4, 0, 0}

→ {1, 2, 3, 5, 4, 0, 0, 0, 0, 0}

NonZero → { 1, 2, 3, 5, 4 }

Zero : { 0, 0, 0, 0, 0 }

{ 1 | 2, 3, 5, 4, 0, 0, 0, 0, 0 }

{0, 0, 0, 1, 1, 1}

two pointer

→ { 0, 1, 2, 3, 0, 0, 5, 4, 0, 0 }

{ 4, ——— 0 }

{ 2, 3, 5, 4, 0, 0, 0, 0, 0, 0 }

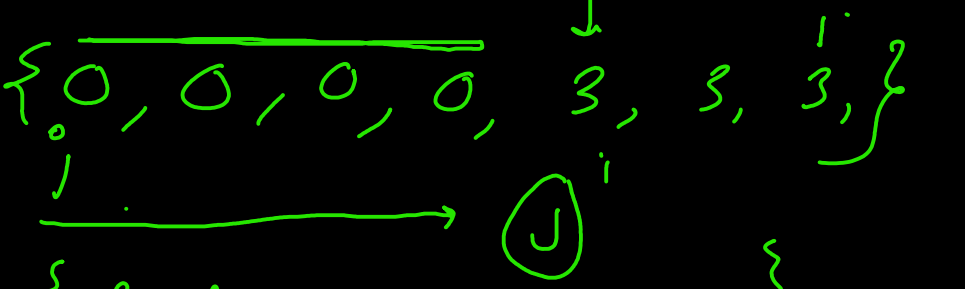
+ if(arr[i] != 0) i++;

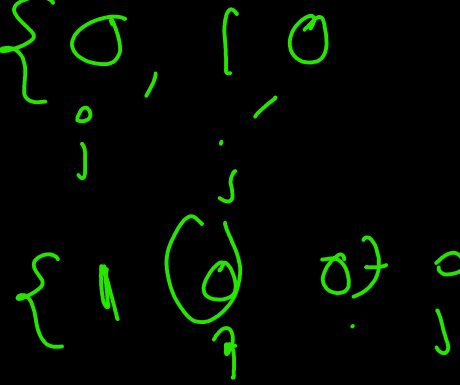
- if(arr[j] == 0) j++;

if(arr[i] == 0 && arr[j] != 0){

swap(arr[i], arr[j]); i++, j++

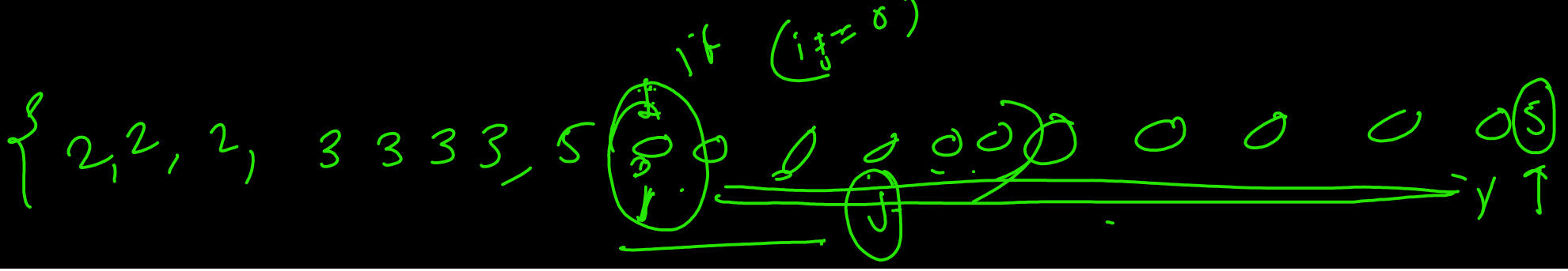
}

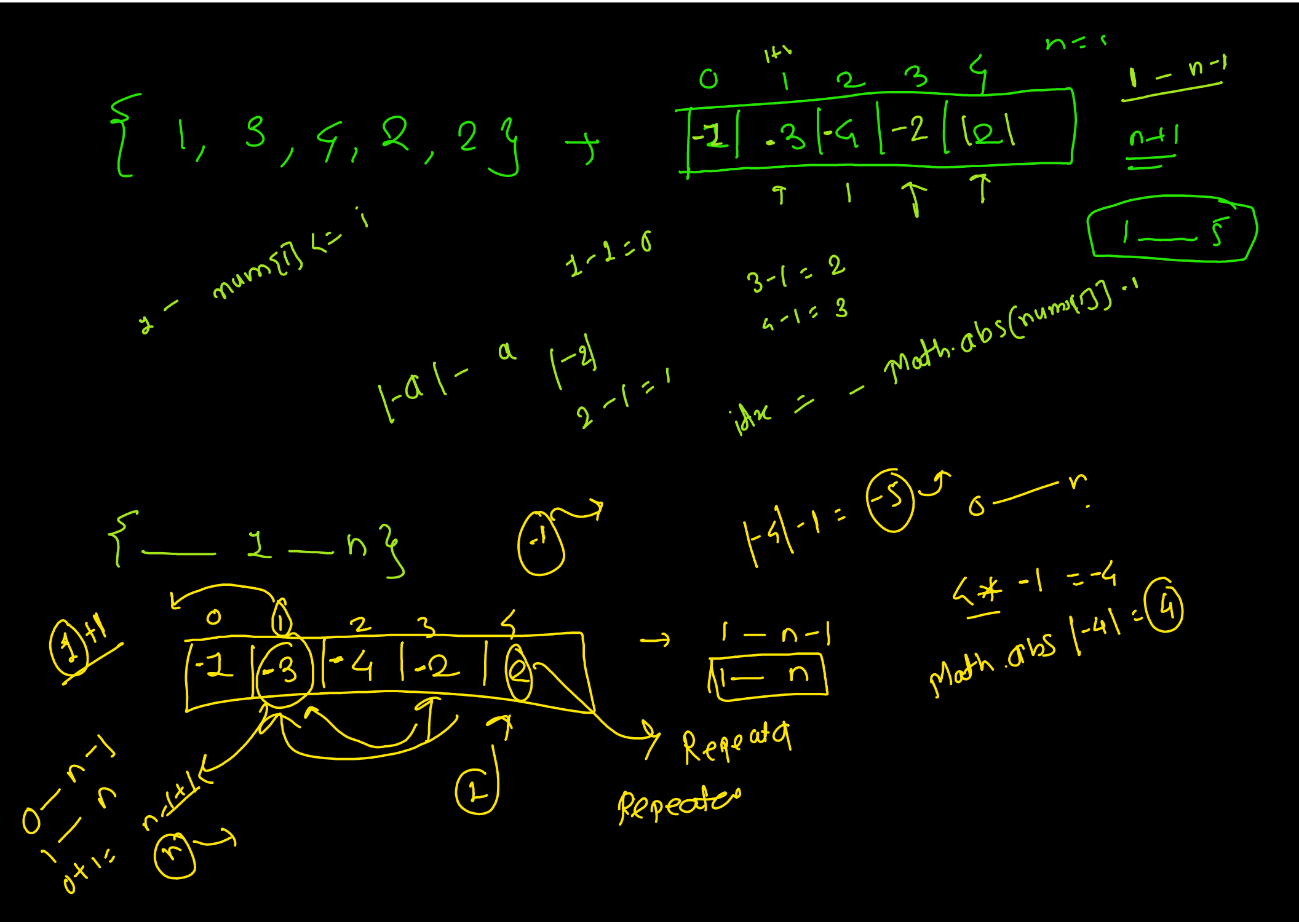




nums[i] = nums[j]

nums[j] = 0




{ 1, 3, 4, 2, 2 } →
0 1 2 3 4
-1 -3 -4 -2 2
n = 5
1 — n-1
n-1
1 — 5
i - num[i] <= i
1-1=0
3-1=2
4-1=3
|-a| - a |-2|
2-1=1
idx = - Math.abs(num[i]) -1
{ — 1 — n }
-1
|-4|-1 = -5
0 — n
4 * -1 = -4
Math.abs |-4| = 4
1+1
0 1 2 3 4
-1 -3 -4 -2 2
1 — n-1
1 — n
0 — n-1
1 — n
0+1 =
n-(+1)
n
1
Repeat
Repeat