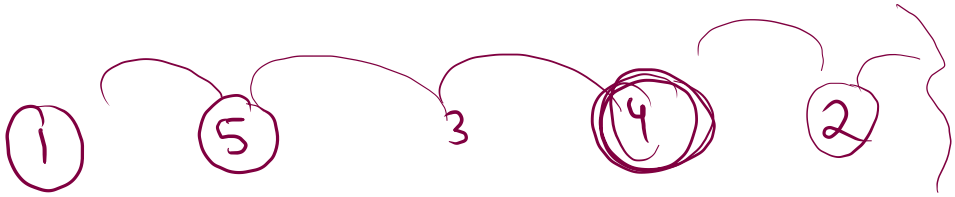
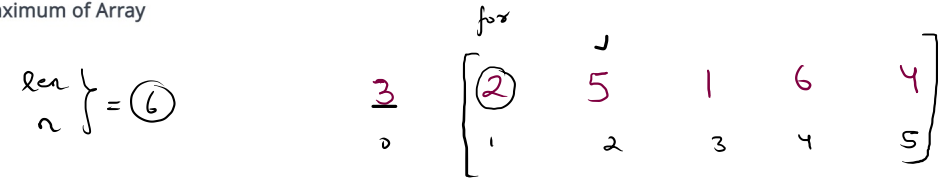
Linear Search.

to search element.

$x = 4$



Maximum of Array



$1 \le n \le 10^6$

```
max = A[0];
```

max = 3 5 6

i = 6

i = 1

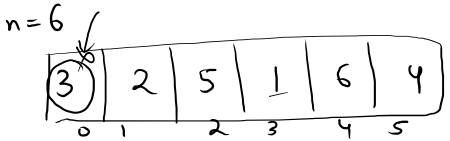
```
A[i] > max
{
    max = A[i];
}
```

i = 3. 1 > 5

i = 2 5 > 3

i = 4 6 > 5

i = 5 4 > 6



max = 3 5 6

```
Scanner scn = new Scanner(System.in);
int n = scn.nextInt();

int [] A = new int[n];
// input of A
for(int i = 0; i < n; i++){
    A[i] = scn.nextInt();
}


int max = A[0];
for(int i = 1; i < n; i++){
    if(A[i] > max){
        max = A[i];
    }
}
System.out.println(max);
```

i = 1 A[i] = A[0] = 3 > 3

A[i] = A[1] = 2 > 3.

i = 2 A[i] = A[2] = 5 > 3

i = 3 A[i] = A[3] = 1 > 5

i = 4 A[i] = A[4] = 6 > 5 ✓

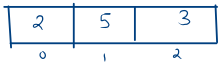
i = 5 A[i] = A[5] = 4 > 5 ✗

i = 6 6 < 6 ✗

Product of element except SELF

Sample Input 0

```
3
2
5
3
```



prod = 2 * 5 * 3
= 30

i = 0 → prod / A[i] = 30/2

i = 1 → prod / A[i] = 30/5 = 6

i = 2 → prod / A[i] = 30/3 = 10

Sample Output 0

```
15
6
10
```

```
//1. find product of all element

int prodWithAll = 1;
int prodWithoutZero = 1;
for(int i = 0; i < n; i++){
        if(A[i] != 0){
            prodWithoutZero *= A[i];
        }
        prodWithAll *= A[i];
}

//2. print prod except self
for(int i = 0; i < n; i++){
    if(A[i] == 0){
        if(count == 1)
            System.out.println(prodWithoutZero);
        else
            System.out.println(0);

    }
    else{
        System.out.println(prodWithAll/A[i]);
    }
```

2 0 5 3

15 30

count = 1

zero.

```
//input for A
int count = 0;
int [] A = new int[n];
for(int i = 0; i < n; i++){
    A[i] = scn.nextInt();
    if(A[i] == 0)
        count++;
}
```

① 2 5 3

ans → 15 6 10

prod = 30

!= 0 → prod / A[i]

② 2 0 5 3

ans → 15 30 6

zero = 1

③ 2 0 0 5 3

15 0 0 6 10

2 1 5 3

30

2 1 1 5 3

30 30

0 0

① 2 5 3 prod = 30 TC

15 6 10

② 2 0 5 3 prod = 30

15 30 6 10

!= 0

prod / A[i]

③ 2 0 0 5 3

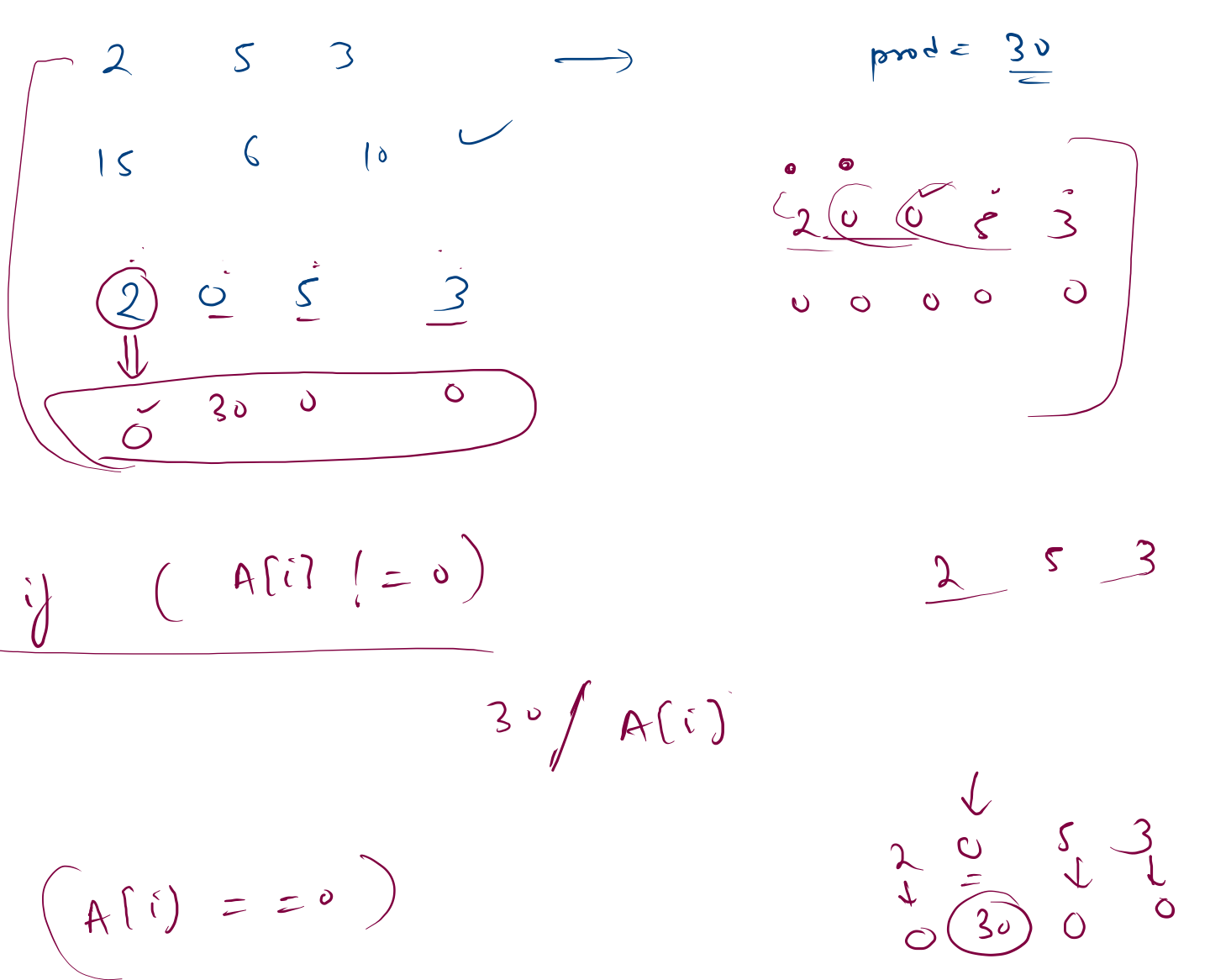
15 0 0 6 10

== 0 && c=1

prod

== 0 && c>1

0


2 5 3
prod = 30
15 6 10
2 0 0 5 3
0 0 0 0 0
2 0 5 3
0 30 0 0
if (A[i] != 0)
2 5 3
30 / A[i]
(A[i] == 0)
2 0 5 3
0 30 0 0

Check Characterstic

Problem | Submissions | Leaderboard | Discus

For each index,

Store 1 at that index if the element at that index is **greater than zero**.

Store 0 at the index if the element at that index is **equal to zero**.

Store -1 at the index if the element at that index is **less than zero**.

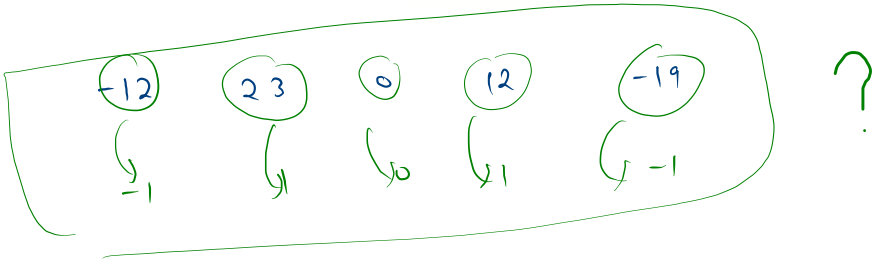
In the end print the complete array one by one.

Sample Input 0

```
5
-12 23 0 12 -19
```

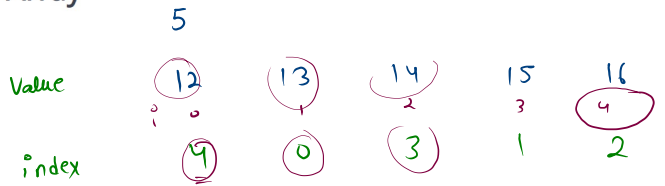
Sample Output 0

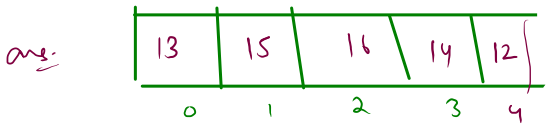
```
-1 1 0 1 -1
```

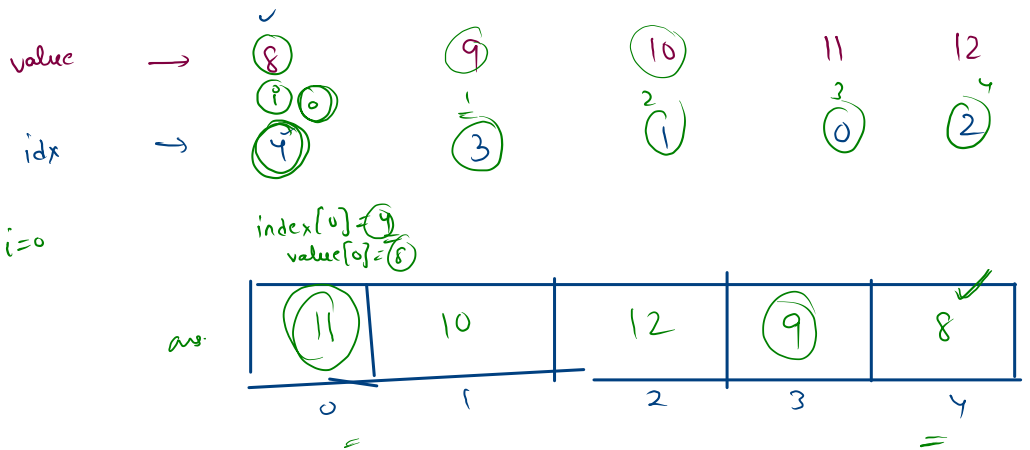



```java
import java.io.*;
import java.util.*;

public class Solution {

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        int n = scn.nextInt();
        int [] A = new int[n];
        for(int i = 0; i < n; i++){
            A[i] = scn.nextInt();
        }

        //logic
        for(int i = 0; i < n; i++){
            if(A[i] > 0){
                A[i] = 1;
            }
            else if(A[i] < 0){
                A[i] = -1;
            }
            System.out.print(A[i] + " ");
        }


    }
}
```

Solve Array








```
int [] ans = new int[n];
for(int i = 0; i < n; i++){
    ans [index[i] ] = value[i];
}
```

ans[3] = 9

index[i] = 3

value[i] = 9

```java
import java.io.*;
import java.util.*;

public class Solution {

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        int n = scn.nextInt();
        int [] value = new int[n];
        for(int i = 0; i < n; i++){
            value[i] = scn.nextInt();
        }

        int [] index = new int[n];
        for(int i = 0; i < n; i++){
            index[i] = scn.nextInt();
        }

        int [] ans = new int[n];
        for(int i = 0; i < n; i++){
            ans [index[i] ] = value[i];
        }

        for(int i = 0; i < n; i++){
            System.out.print(ans[i] + " ");
        }
    }
}
```

```java
import java.io.*;
import java.util.*;

public class Solution {
    public static int [] solve(int [] value, int [] index){
        int [] ans = new int[value.length];
        for(int i = 0; i < value.length; i++){
            ans[index[i]] = value[i];
        }
        return ans;
    }
    public static void printArr(int [] A){
        for(int i = 0; i < A.length; i++){
            System.out.print(A[i] + " ");
        }
    }

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        int n = scn.nextInt();
        int [] value = new int[n];
        for(int i = 0; i < n; i++){
            value[i] = scn.nextInt();
        }

        int [] index = new int[n];
        for(int i = 0; i < n; i++){
            index[i] = scn.nextInt();
        }

        int [] ans = solve(value, index);
        printArr(ans);

    }
}
```