Sansa has an array. She wants to find the value obtained by XOR-ing the contiguous subarrays, followed by XOR-ing the values thus obtained. Determine this value.

For example, if $arr = [3, 4, 5]$:

```
Subarray        Operation       Result
3               None            3
4               None            4
5               None            5
3,4             3 XOR 4         7
4,5             4 XOR 5         1
3,4,5           3 XOR 4 XOR 5   2
```

Now we take the resultant values and XOR them together:

$$3 \oplus 4 \oplus 5 \oplus 7 \oplus 1 \oplus 2 = 6$$

Function Description

Complete the *sansaXor* function in the editor below. It should return an integer that represents the results of the calculations.

sansaXor has the following parameter(s):

- *arr*: an array of integers

Input Format

The first line contains an integer t, the number of the test cases.

Each of the next t pairs of lines is as follows:
- The first line of each test case contains an integer n, the number of elements in arr.
- The second line of each test case contains n space-separated integers $arr[i]$.

Constraints

$1 \leq t \leq 5$
$2 \leq n \leq 10^5$
$1 \leq arr[i] \leq 10^8$

Output Format

Print the results of each test case on a separate line.

Sample Input 0

```
2
3
1 2 3
4
4 5 7 5
```

Sample Output 0

```
2
0
```

Explanation 0

Test case 0:
$1 \oplus 2 \oplus 3 \oplus (1 \oplus 2) \oplus (2 \oplus 3) \oplus (1 \oplus 2 \oplus 3) = 2$

Test case 1:
$4 \oplus 5 \oplus 7 \oplus 5 \oplus (4 \oplus 5) \oplus (5 \oplus 7) \oplus (7 \oplus 5) \oplus (4 \oplus 5 \oplus 7) \oplus (5 \oplus 7 \oplus 5) \oplus (4 \oplus 5 \oplus 7 \oplus 5) = 0$

Sample Input 1

```
2
3
98 74 12
3
50 13 2
```

Sample Output 1

```
110
48
```

Explanation 1

Test Case 0:

$$98 \oplus 74 \oplus 12 \oplus (98 \oplus 74) \oplus (74 \oplus 12) \oplus (98 \oplus 74 \oplus 12) = 110$$

Test Case 1:

$$50 \oplus 13 \oplus 2 \oplus (50 \oplus 13) \oplus (13 \oplus 2) \oplus (50 \oplus 13 \oplus 2) = 48$$