Yet Another question on inversions

Problem Statement

As you might know for a given array **a**, an **inversion** is defined as a pair of indices **(i,j)** such that **a[i]>a[j]** and **i < j**.

You are given an array containing **N** values.

You have to perform **K** operations on it. The operations are of 2 types:

1. **R x**: where x is a non-negative integer. This operation rotates the array x times.
2. **C**: This operation counts and prints the number of inversions in the array.

Rotation of an array is defined as follows: The first element of the array is removed and placed at the end of the array.

Example: Array [1,3,5,7,9] becomes [3,5,7,9,1] after one rotation

Input Format

First line contains **N** and **K**, the number of elements in array and the number of operations to be performed.

Second line contains **N** values the elements of the array $\mathbf{A_1}$ through $\mathbf{A_n}$.

The following **K** lines contain the operations to be performed, one operation per line as described in the question.

Output Format

For each operation of type 2, output the number of inversions in the array formed after the rotations performed upto this point. Each output should be present in a new line.

Constraints

$1<=\mathbf{N}<=10^5$

$1<=\mathbf{K}<=10^5$

$1<=\mathbf{A_i}<=10^9$

$1<=\mathbf{x}<=10^9$

Sample Input

```
5 3
1 2 3 4 5
C
R 1
C
```

Sample Output

```
0
4
```

Explanation

Initially the array is sorted so it has no inversions.

After 'R 1', array becomes [2,3,4,5,1]

Now the array contains 4 inversions (A_1=2,A_5=1), (A_2=3,A_5=1), (A_3=4,A_5=1) and (A_4=5,A_5=1).