

A Simple Problem with Integers - POJ 3468

<https://vjudge.net/problem/poj-3468>

You have N integers, A_1, A_2, \dots, A_N . You need to deal with two kinds of operations. One type of operation is to add some given number to each number in a given interval. The other is to ask for the sum of numbers in a given interval.

Input

The first line contains two numbers N and Q . $1 \leq N, Q \leq 100000$.

The second line contains N numbers, the initial values of A_1, A_2, \dots, A_N . $-1000000000 \leq A_i \leq 1000000000$.

Each of the next Q lines represents an operation.

"C a b c " means adding c to each of A_a, A_{a+1}, \dots, A_b . $-10000 \leq c \leq 10000$.

"Q a b " means querying the sum of A_a, A_{a+1}, \dots, A_b .

Output

You need to answer all Q commands in order. One answer in a line.

Sample Input

```
10 5
1 2 3 4 5 6 7 8 9 10
Q 4 4
Q 1 10
Q 2 4
C 3 6 3
Q 2 4
```

Sample Output

```
4
55
9
15
```

Hint

The sums may exceed the range of 32-bit integers.