

# Accounting

SEASON 2021/2022 – FORTH ROUND



After a lot of pressure, Sashka decided to become an accountant. Her job is to process queries on the only array of her company  $a_1, a_2, a_3, \dots, a_N$ , which consists of  $N$  elements. The queries are the following:

- $l \ r \ x$  – For every element  $a_i$  ( $l \leq i \leq r$ ) of the array,  $a_i := x - a_i$
- ?  $l \ r$  – Question for the value of  $a_l + a_{l+1} + a_{l+2} + \dots + a_r$ .

Sashka hates her job. Because of that, she decided to create a program, which will process the queries instead of her. Unfortunately, the program she created is too slow. You, as her colleague, are concerned about her. That's why you decided to try writing a program `accounting.cpp`, which will help Sashka.

## Input

The first line of the file `accounting.in` contains two integers  $N$  and  $Q$ , respectively the count of elements in the array and the number of queries. On the next line there are  $N$  integers, respectively  $a_1, a_2, a_3, \dots, a_N$ . Every of the last  $Q$  lines describes a query in the format, mentioned above.

## Output

For every question query, you should print a number on a new line in `accounting.out`, which is the answer of the query.

## Constraints

$$1 \leq N, Q \leq 100\,000$$

$$0 \leq a_i, x \leq 10^6$$

$$1 \leq l \leq r \leq N$$

**Time Limit: 1.5 sec.**

**Memory Limit: 256 MB.**

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## Sample Testcases

Input (accounting.in)	Output (accounting.out)
5 7 57 18 40 89 7 - 2 3 94 ? 1 5 ? 3 5 - 2 4 41 ? 2 4 ? 1 5 ? 3 4	283 150 -96 -32 -61
10 10 92 7 84 86 14 3 58 56 19 80 - 2 10 63 ? 3 10 ? 5 8 - 1 6 72 ? 3 6 - 2 8 32 ? 2 3 ? 9 10 ? 3 9 ? 4 8	104 121 223 -45 27 1 18