

F. SUM and REPLACE

time limit per test: 2 seconds
memory limit per test: 256 megabytes

Let $D(x)$ be the number of positive divisors of a positive integer x . For example, $D(2) = 2$ (2 is divisible by 1 and 2), $D(6) = 4$ (6 is divisible by 1, 2, 3 and 6).

You are given an array a of n integers. You have to process two types of queries:

1. REPLACE $l\ r$ — for every $i \in [l, r]$ replace a_i with $D(a_i)$;
2. SUM $l\ r$ — calculate $\sum_{i=l}^r a_i$.

Print the answer for each SUM query.

Input

The first line contains two integers n and m ($1 \leq n, m \leq 3 \cdot 10^5$) — the number of elements in the array and the number of queries to process, respectively.

The second line contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^6$) — the elements of the array.

Then m lines follow, each containing 3 integers t_i, l_i, r_i denoting i -th query. If $t_i = 1$, then i -th query is REPLACE $l_i\ r_i$, otherwise it's SUM $l_i\ r_i$ ($1 \leq t_i \leq 2, 1 \leq l_i \leq r_i \leq n$).

There is at least one SUM query.

Output

For each SUM query print the answer to it.

Example

input	Copy
7 6 6 4 1 10 3 2 4 2 1 7 2 4 5 1 3 5 2 4 4 1 5 7 2 1 7	
output	Copy
30 13 4 22	

Educational Codeforces Round 37
(Rated for Div. 2)

Finished

Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
291100293	Nov/11/2024 20:53	Accepted
272706764	Jul/26/2024 15:24	Accepted
272706612	Jul/26/2024 15:23	Accepted
272705738	Jul/26/2024 15:17	Time limit exceeded on test 2
272451221	Jul/24/2024 22:59	Time limit exceeded on test 2
272449990	Jul/24/2024 22:41	Time limit exceeded on test 2
272273957	Jul/24/2024 11:01	Time limit exceeded on test 2
272273310	Jul/24/2024 10:56	Time limit exceeded on test 2

→ Problem tags

brute force data structures dsu

number theory *2000

No tag edit access

→ Contest materials

Announcement

T (en)