M. Batates and GCD

time limit per test: 2 seconds

memory limit per test: 256 megabytes

Given an array of n integers and q queries, there are three types of queries:

- $1\ l\ r$: Let g be the GCD of the subarray from index l to r. Divide each element in the subarray by g.
- $2\ l\ r$: Output the sum of the subarray from index l to r.
- 3: Undo the last applied query of the first type.

Each type 3 query undoes the most recently applied type 1 query that has not been previously canceled.

For each query of type 3, it is guaranteed that there is a query of type 1 that has not been canceled.

Input
The first line contains a single integer t $(1 \le t \le 10^5)$ — the number of test cases.

The first line of each test case contains two integers n, q $(1 \le n, q \le 10^5)$ — the length of the array a, the number of queries.

The next line contains n integers $a_1, a_2, \ldots, a_n$ $(1 \le a_i \le 10^9)$ — the array a.

The next q lines contain the queries as described above.

It is guaranteed that in the queries of the first and second type $(1 \le l \le r \le n)$.

It is guaranteed that the sum of n and q over all test cases does not exceed 10^5.

Output
For each query of the second type, output the sum of the subarray from index l to r.

Example

```
input
1
6 6
2 6 10 5 5 15
1 3 6
2 4 6
1 1 3
2 1 6
3
2 1 6
```

```
output
5
10
15
```

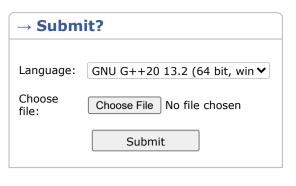**ECPC Teens 2024 (online qualification)**

Finished

Practice

⭐

→ Virtual participation ⌄

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

Choose file: Choose File No file chosen

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→ **Last submissions**

Submission	Time	Verdict
291102494	Nov/11/2024 21:12	**Accepted**
274093455	Aug/03/2024 04:17	**Accepted**
274093338	Aug/03/2024 04:15	Runtime error on test 4
274093233	Aug/03/2024 04:13	Compilation error
274093041	Aug/03/2024 04:10	Runtime error on test 4
274090972	Aug/03/2024 03:18	Runtime error on test 4