

## 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  $t$  ( $1 \leq t \leq 10^5$ ) — the number of test cases.

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

The next line contains  $n$  integers  $a_1, a_2, \dots, a_n$  ( $1 \leq a_i \leq 10^9$ ) — 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 ( $1 \leq l \leq r \leq n$ ).

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	Copy
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	Copy
5 10 15	

### ACPC Scientific Committee Archive

Private

Participant



### About Group

https://www.youtube.com/@MoamenAhmed98/play


Group website

### Group Contests

- LCPC 2024 (Mirror)
- JCPC 2024 (Mirror)
- EthCPC (Mirror)
- PCPC 2024
- LyCPC 2024
- AOCPC 2024
- AOCPC 2023
- QCPC 2024 (Mirror)
- TCPC 2024 (Mirror)
- AICPC 2023
- SCPC 2024 (Mirror)
- SCPC 2024 For Teens (Mirror)
- ECPC 2024 (Mirror)
- ECPC Qualifications 2024 Day 6 (Mirror)
- ECPC Qualifications 2024 Day 5 (Mirror)
- ECPC Qualifications 2024 Day 4 (Mirror)
- ECPC Qualifications 2024 Day 3 (Mirror)
- ECPC Qualifications 2024 Day 2 (Mirror)
- ECPC Qualifications 2024 Day 1 (Mirror)
- International Collegiate Programming Contest, Damascus University Collegiate Programming Contest(2018)
- International Collegiate Programming Contest, Al-Baath, Tishreen, Aleppo and Damascus Collegiate Programming Contest (2021)
- The 2023 ICPC Egyptian Collegiate Programming Contest (Qualifications Day 2)
- ACPC Girls 2024
- The 2023 ICPC Egyptian Collegiate Programming Contest (Qualifications Day 6)
- The 2023 ICPC Egyptian Collegiate Programming Contest (Qualifications Day 1)
- The 2023 ICPC Egyptian Collegiate Programming Contest (Qualifications Day 3)
- ACPC KickOff 2024

- SCPC 2023
- SCPC 2022
- The 2023 ICPC Egyptian Collegiate Programming Contest (Qualifications Day 9)
- The 2023 ICPC Egyptian Collegiate Programming Contest (Qualifications Day 8)
- The 2023 ICPC Egyptian Collegiate Programming Contest (Qualifications Day 7)
- The 2023 ICPC Egyptian Collegiate Programming Contest (Qualifications Day 5)
- The 2023 ICPC Egyptian Collegiate Programming Contest (Qualifications Day 4)
- ACPC KickOff 2022
- ACPC KickOff 2023
- SCPC 2021
- SCPC 2020
- SCPC 2017
- SCPC 2019
- ECPC Teens 2024 (online qualification)
- Kickoff 2021
- ECPC 2021
- ACPC 2023
- Sa3edyCPC 2019
- The 2023 ICPC Egyptian Collegiate Programming Contest (Qualifications - Day 10)
- JCPC 2023
- ECPC Qualifications 20-08-2022
- KCPC 2023
- ACPC Girls 2023
- SCPC Teens 2023
- ACPC 2022
- ACPC 2021
- ACPC 2020
- ACPC 2019
- ACPC 2018
- ECPC 2023
- ECPC 2022
- ECPC 2020
- ECPC 2019
- ECPC 2018

<b><u>ECPC Teens 2024 (online qualification)</u></b>
<b>Finished</b>
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

→ Submit?

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

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
<a href="#">291102494</a>	Nov/11/2024 21:12	Accepted
<a href="#">274093455</a>	Aug/03/2024 04:17	Accepted
<a href="#">274093338</a>	Aug/03/2024 04:15	Runtime error on test 4
<a href="#">274093233</a>	Aug/03/2024 04:13	Compilation error
<a href="#">274093041</a>	Aug/03/2024 04:10	Runtime error on test 4
<a href="#">274090972</a>	Aug/03/2024 03:18	Runtime error on test 4

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Server time: Nov/24/2024 00:10:11<sup>UTC+2</sup> (j3).  
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