



2x GCD Queries

locked

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Problem

Submissions

Leaderboard

Discussions

The Greatest Common Divisor (GCD) of two integers, a and b , is the largest number which divides both a and b . For example: $\text{GCD}(10, 5) = 5$, $\text{GCD}(21, 14) = 7$. Let us assume $\text{GCD}(0, 0) = 0$.

You are given an array, A , of N integers. You are tasked to answer Q queries. There are two types of queries:

1. print the GCD of the integers in A from index i to index j ($i \leq j$), i.e. $\text{GCD}(A[i..j])$, where i and j are inclusive.
2. update any element within the array to a specified value

Input Format

The first line of input contains the integer N . Following this line is N space separated integers a_i (where a_i denotes the i th integer).

The next line contains a single integer Q describing the number of queries to answer.

Then Q lines follow, each of these lines may be of the form:

- 1 i j Print the Greatest Common Divisor of the integers in A from index i to index j
- 2 i x Update $A[i]$ to the value x , i.e. set $A[i] = x$

Constraints

- $1 \leq N \leq 10^5$
- $-2 * 10^9 \leq a_i \leq 2 * 10^9$
- $1 \leq Q \leq 10^5$
- $i \leq j$ and $0 \leq i, j < N$
- $-2 * 10^9 \leq x \leq 2 * 10^9$

Output Format

For each query which begins with 1, please print the Greatest Common Divisor of the integers in A from index i to index j .

Sample Input 0

```
5
21 21 21 21 21
4
1 0 4
2 0 14
2 2 7
1 0 2
```

Sample Output 0

```
21
7
```

Sample Input 1

```
3
-1 -2 3
4
1 0 2
2 0 -3
2 1 -3
1 0 2
```

Sample Output 1

```
1
3
```

[f](#) [t](#) [in](#)Submissions: [53](#)



Max Score: 30



Difficulty: Medium

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Python 3  

1

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