D. CGCDSSQ

https://codeforces.com/contest/475/problem/D
difficulty: 2000
time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Given a sequence of integers $a_1, a_2, \ldots, a_n$ and q queries $x_1, \ldots, x_q$ on it. For each query x_i you have to count the number of pairs (l, r) such that $1 \le l \le r \le n$ and $gcd(a_l, a_{l+1}, \ldots, a_r) = x_i$. $gcd(v_1, v_2, \ldots, v_n)$ is a greatest common divisor of $v_1, v_2, \ldots, v_n$, that is equal to a largest positive integer that divides all v_i.

Input

The first line of the input contains integer n, $(1 \le n \le 10^5)$, denoting the length of the sequence. The next line contains n space separated integers $a_1, \ldots, a_n$, $(1 \le a_i \le 10^9)$.

The third line of the input contains integer q, $(1 \le q \le 3 \times 10^5)$, denoting the number of queries. Then follows q lines, each contain an integer x_i, $(1 \le x_i \le 10^9)$.

Output

For each query print the result in a separate line.

Examples

Input	Output
3 2 6 3 5 1 2 3 4 6	1 2 2 0 1
7 10 20 3 15 1000 60 16 10 1 2 3 4 5 6 10 20 60 1000	14 0 2 2 2 0 2 2 1 1

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brute force, data structures, math