

D. Upgrading Array

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

You have an array of positive integers $a[1], a[2], \dots, a[n]$ and a set of *bad* prime numbers b_1, b_2, \dots, b_m . The prime numbers that do not occur in the set b are considered *good*. The *beauty* of array a is the sum $\sum_{s=1}^n f(s)$, where function $f(s)$ is determined as follows:

- $f(1) = 0$;
- Let's assume that p is the minimum prime divisor of s . If p is a good prime, then $f(s) = f(s/p) + 1$, otherwise $f(s) = f(s/p)$.

You are allowed to perform an arbitrary (probably zero) number of operations to improve array a . The *operation of improvement* is the following sequence of actions:

- Choose some number r ($1 \leq r \leq n$) and calculate the value $g = \text{GCD}(a[1], a[2], \dots, a[r])$.
- Apply the assignments: $a[1] := a[1]/g, a[2] := a[2]/g, \dots, a[r] := a[r]/g$.

What is the maximum beauty of the array you can get?

Input

The first line contains two integers n and m ($1 \leq n, m \leq 5000$) showing how many numbers are in the array and how many bad prime numbers there are.

The second line contains n space-separated integers $a[1], a[2], \dots, a[n]$ ($1 \leq a[i] \leq 10^9$) — array a . The third line contains m space-separated integers b_1, b_2, \dots, b_m ($2 \leq b_1 < b_2 < \dots < b_m \leq 10^9$) — the set of bad prime numbers.

Output

Print a single integer — the answer to the problem.

Examples

input
5 2 4 20 34 10 10 2 5
output
-2

input
4 5 2 4 8 16 3 5 7 11 17
output
10

Note

Note that the answer to the problem can be negative.

The $\text{GCD}(x_1, x_2, \dots, x_k)$ is the maximum positive integer that divides each x_i .