Kate and Company Management

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Everybody has their unique ability, for person i, let a_i be his or her level of ability. For person i and person j, we assume that they can get along with each other if and only if $\gcd(a_i, a_j) \neq 1$.

We consider a team **harmonious** when it satisfies conditions below:

A harmonious team should contain no less than 3 colleagues. In a harmonious team which contains m colleagues, the person with $i-th$ highest level of ability will cooperate with $(i-1)-th$ and $(i+1)-th$ one. Note that the person with highest level of ability will only cooperate with the second one. Likewise, the person with $m-th$ highest level of ability will only cooperate with the $(m-1)-th$ one. Most importantly, every member should get along with those who are in cooperation with him or her.

Now Kate is the boss of a company with n workers whose levels of ability are **different** from each other, and she hopes that you organize a largest harmonious team and then output the number of workers engaged. If you find it impossible, output `-1`.

Input

The first line contains the single integer $n(3 \leq n \leq 3 \times 10^5)$, the number of workers in Kate's company.

The second line contains n integers $a_i(1 \leq a_i \leq 10^5)$, which respectively represents the level of ability of the $i-th$ worker.

Output

Output only one line with one integer, which represents the number of workers in the largest harmonious team. Output `-1` if such team doesn't exist.

Examples

standard input	standard output
5 19 15 5 1 12	-1
10 2 7 18 3 9 11 5 12 17 20	5