D. Ghd

time limit per test: 4 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

John Doe offered his sister Jane Doe find the gcd of some set of numbers a.

Gcd is a positive integer g, such that all number from the set are evenly divisible by g and there isn't such g' ($g' > g$), that all numbers of the set are evenly divisible by g'.

Unfortunately Jane couldn't cope with the task and John offered her to find the ghd of the same subset of numbers.

Ghd is a positive integer g, such that at least half of numbers from the set are evenly divisible by g and there isn't such g' ($g' > g$) that at least half of the numbers from the set are evenly divisible by g'.

Jane coped with the task for two hours. Please try it, too.

Input

The first line contains an integer n ($1 \le n \le 10^6$) showing how many numbers are in set a. The second line contains space-separated integers $a_1, a_2, ..., a_n$ ($1 \le a_i \le 10^{12}$). Please note, that given set can contain **equal** numbers.

Please, do not write the `%lld` specifier to read or write 64-bit integers in C++. It is preferred to use the `%I64d` specifier.

Output

Print a single integer g — the Ghd of set a.

Examples

input Copy

```
6
6 2 3 4 5 6
```

output Copy

```
3
```

input Copy

```
5
5 5 6 10 15
```

output Copy

```
5
```

- Announcement #2 (en)
- Tutorial #1 (en)
- Tutorial #2 (ru)