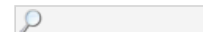


[HOME](#) [TOP](#) [CONTESTS](#) [GYM](#) [PROBLEMSET](#) [GROUPS](#) [RATING](#) [API](#) [HELP](#) [CALENDAR](#)

[PROBLEMS](#) [SUBMIT CODE](#) [MY SUBMISSIONS](#) [STATUS](#) [HACKS](#) [ROOM](#) [STANDINGS](#) [CUSTOM INVOCATION](#)

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 ($1 \leq n \leq 10^6$) showing how many numbers are in set a . The second line contains space-separated integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^{12}$). 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	

Codeforces Round #213 (Div. 1)

[Finished](#)
[Practice](#)


→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest](#)

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

[Clone Contest](#)

→ Submit?

 Language: GNU G++11 5.1.0

 Choose file: [选择文件](#) 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

[Submit](#)

→ Problem tags

[brute force](#) [math](#) [probabilities](#) *2600

No tag edit access

→ Contest materials

- Announcement #1 (ru) 

- [Announcement #2 \(en\)](#) ☐
- [Tutorial #1 \(en\)](#) ☐
- [Tutorial #2 \(ru\)](#) ☐

[Codeforces](#) (c) Copyright 2010-2019 Mike Mirzayanov
The only programming contests Web 2.0 platform
Server time: Jul/17/2019 19:48:42^{UTC+8} (e3).
Desktop version, switch to [mobile version](#).
[Privacy Policy](#).

Supported by



ITMO UNIVERSITY