

B. Multiplication Table

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Sasha grew up and went to first grade. To celebrate this event her mother bought her a multiplication table M with n rows and n columns such that $M_{ij} = a_i \cdot a_j$ where a_1, \dots, a_n is some sequence of positive integers.

Of course, the girl decided to take it to school with her. But while she was having lunch, hooligan Grisha erased numbers on the main diagonal and threw away the array a_1, \dots, a_n . Help Sasha restore the array!

Input

The first line contains a single integer n ($3 \leq n \leq 10^3$), the size of the table.

The next n lines contain n integers each. The j -th number of the i -th line contains the number M_{ij} ($1 \leq M_{ij} \leq 10^9$). The table has zeroes on the main diagonal, that is, $M_{ii} = 0$.

Output

In a single line print n integers, the original array a_1, \dots, a_n ($1 \leq a_i \leq 10^9$). It is guaranteed that an answer exists. If there are multiple answers, print any.

Examples

input	Copy
5 0 4 6 2 4 4 0 6 2 4 6 6 0 3 6 2 2 3 0 2 4 4 6 2 0	
output	Copy
2 2 3 1 2	

input	Copy
3 0 99990000 99970002 99990000 0 99980000 99970002 99980000 0	
output	Copy
9999 10000 9998	

Codeforces Round #586 (Div. 1 + Div. 2)

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 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

math number theory *1300

No tag edit access

→ Contest materials

Announcement #1 (en)

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