CODEFORCES $^\beta$
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HOME   TOP   CONTESTS   GYM   PROBLEMSET   GROUPS   RATING   API   HELP   LYFT 🏆   MAILRU CUP 🏆   CALENDAR

PROBLEMS   SUBMIT CODE   MY SUBMISSIONS   STATUS   HACKS   ROOM   STANDINGS   CUSTOM INVOCATION

C. On the Bench

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

A year ago on the bench in public park Leha found an array of n numbers. Leha believes that permutation p is right if for all $1 \leq i < n$ condition, that $a_{p_i} \cdot a_{p_{i+1}}$ is not perfect square, holds. Leha wants to find number of right permutations modulo $10^9 + 7$.
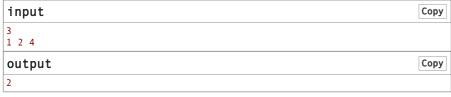
Input

First line of input data contains single integer n ($1 \leq n \leq 300$) — length of the array.

Next line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \leq a_i \leq 10^9$) — found array.

Output

Output single integer — number of right permutations modulo $10^9 + 7$.

Examples

input	Copy
3 1 2 4	

output	Copy
2	

input	Copy
7 5 2 4 2 4 1 1	

output	Copy
144	

Note

For first example:

$[1, 2, 4]$ — right permutation, because 2 and 8 are not perfect squares.

$[1, 4, 2]$ — wrong permutation, because 4 is square of 2.

$[2, 1, 4]$ — wrong permutation, because 4 is square of 2.

$[2, 4, 1]$ — wrong permutation, because 4 is square of 2.

$[4, 1, 2]$ — wrong permutation, because 4 is square of 2.

$[4, 2, 1]$ — right permutation, because 8 and 2 are not perfect squares.

Codeforces Round #429 (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++17 7.3.0 ▼]

Choose file: [Choose File] No file chosen

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]

→ Last submissions

Submission	Time	Verdict
29576208	Aug/18/2017 19:28	**Accepted**
29575524	Aug/18/2017 19:22	Wrong answer on pretest 4

→ Problem tags

combinatorics   dp

No tag edit access

→ **Contest materials**

- Announcement   ×
- Tutorial   ×

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The only programming contests Web 2.0 platform
Server time: Oct/17/2018 18:33:26 (f1).
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