

A. Ancient

time limit per test: 4 seconds
memory limit per test: 256 megabytes

In the hushed sands of time, a story unfolds, tracing back over 5,000 years to the birth of an ancient civilization along the banks of the Nile. Egypt's history, steeped in mystery and grandeur, weaves tales of ancient Egyptians, pyramids, and a timeless legacy that continues to captivate the world to this day. Taha, a determined archaeologist, and Mohamed, a young historian, unite to unravel Egypt's enigmatic past. Their shared journey leads them through the ages, revealing secrets that will reverberate through time, as they uncover the untold tales of the mighty ancient Egyptians and the lost wonders of an ancient world.

While Taha and Mohamed were exploring the ancient Egypt, they came across an array a of n integers. Taha, who loved mathematics, gave it to Mohamed and asked him to count the number of Tahanian subsets in the array. A Tahanian subset is a non-empty group of numbers from the array whose product is a perfect square.

Since Mohamed is occupied with exploring the ancient Egypt, he needs your help to solve the problem. Can you do it?

As the answer can be very big, print it modulo $1000000007(10^9 + 7)$.

Input

the first line contains a single integer n ($1 \leq n \leq 10^5$), the number of elements in the array a .

Then n integers separated by a space follow representing the elements of the array a ($1 \leq a_i \leq 10^3$).

Output

output an integer represents the number of Tahanian subsets in the array modulo $1000000007(10^9 + 7)$.

Examples

input	Copy
4 1 1 1 1	
output	Copy
15	
input	Copy
4 2 2 2 2	
output	Copy
7	
input	Copy
5 1 2 4 5 8	
output	Copy
7	

ACPC Scientific Committee Archive

Private

Participant



About Group

https://www.youtube.com/@MoamenAhmed98/play

Group website

Group Contests

- ICPC International Collegiate Programming Contest, Assiut Collegiate Programming Contest (2019)
- International Collegiate Programming Contest, GUC Collegiate Programming Contest (2019)
- ACPC Kickoff 2025
- International Collegiate Programming Contest, Aleppo University Collegiate Programming Contest(2018)
- ECPC Qualifications 2021 - Day 4
- International Collegiate Programming Contest, Al-Baath, Tishreen, Aleppo and Damascus Collegiate Programming Contest (2021)
- The 2020 Egyptian Collegiate Programming Qualification Contest Day 2
- OCPC 2025 (Qualification)
- OCPC 2025
- ACPC 2024 (Mirror)
- LCPC 2024 (Mirror)
- JCPC 2024 (Mirror)
- EthCPC (Mirror)
- PCPC 2024
- LyCPC 2024
- AOCPC 2024
- AOCPC 2023
- QCPC 2024 (Mirror)
- TCPC 2024 (Mirror)
- AICPC 2023
- SCPC 2024 (Mirror)
- SCPC 2024 For Teens (Mirror)
- ECPC 2024 (Mirror)
- ECPC Qualifications 2024 Day 6 (Mirror)
- ECPC Qualifications 2024 Day 5 (Mirror)
- ECPC Qualifications 2024 Day 4 (Mirror)
- ECPC Qualifications 2024 Day 3 (Mirror)
- ECPC Qualifications 2024 Day 2 (Mirror)