

Perfect Square

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 1024 megabytes

Little A has a sequence of positive integers of length n , denoted as a_1, a_2, \dots, a_n . He wishes to create another sequence of positive integers of length n , denoted as d_1, d_2, \dots, d_n , such that d_i is a divisor of a_i .

It is evident that d_1, d_2, \dots, d_n are not unique, so Little A hopes that the product of d_1, d_2, \dots, d_n is a perfect square $x = y^2$, where y is a positive integer.

However, at this point, d_1, d_2, \dots, d_n are still not unique. Therefore, Little A wants to know the sum of y , the square root of the product for all possible combinations of d_1, d_2, \dots, d_n that yield a perfect square $x = y^2$, modulo $10^9 + 7$.

Input

The first line contains an integer n ($1 \leq n \leq 10^6$) representing the length of the positive integer sequence.

The second line contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^6$), representing the positive integer sequence.

Output

Output a single line containing an integer representing the answer.

Example

standard input	standard output
2 4 4	11

Note

Possible cases include $1 \times 1 = 1, 1 \times 2 = 2, 1 \times 4 = 4, 2 \times 1 = 2, 2 \times 2 = 4, 2 \times 4 = 8, 4 \times 1 = 4, 4 \times 2 = 8, 4 \times 4 = 16$.

Among these, the products that are perfect squares are $1 \times 1 = 1, 1 \times 4 = 4, 2 \times 2 = 4, 4 \times 1 = 4, 4 \times 4 = 16$.

The answer is equal to $\sqrt{1} + \sqrt{4} + \sqrt{4} + \sqrt{4} + \sqrt{16} = 1 + 2 + 2 + 2 + 4 = 11$.