Smallest Magic Number

For a given set of numbers, magic number is a number, greater than 1, whose square perfectly divides the product of these numbers. Write an algorithm to find the smallest magic number for the given set of numbers.

Input:
The first line of the input consists of an integer N, representing the number of integers in the given set.
The second line consists of N space-separated integers val_1, val_2,…..,val_n representing the numbers in the given set.

Output:
Print an integer representing the smallest magic number greater than 1.

Constraints:
1 <= N <= 1000
1 <= val_i <= 10^{12}
0 <= i < N

Note:
At least one of the factors in the product of these N numbers is a perfect square.

Example:
Input:

3
2 3 6

Output:

2

Explanation:
Product of given set of number = 36. Possible magic numbers are 2, 3, and 6. As 2 is the smallest. So, the output is 2.