Problem J – Jaime's multiplications.

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One reason why Jaime loves so much small prime numbers, those less than 30, is that he can perform operations over them with his mind without taking much effort.
This evening, Jaime has created a list of N positive integer numbers multiplying only the prime numbers he loves, and all the multiplications were done with his mind. After a quick look to the clock, Jaime determined it was time to take a rest. Jaime went to bed to take a nap, but he was unable to fall asleep, something is bothering his mind. He can not stop thinking in the list of numbers he created, he believes he can take a subsequence of the list such that when multiplying all the integer numbers of the subsequence, he will get a perfect square number.
Jaime is really tired, so you decided to help him find such subsequence, however, you know the next thing will bother Jaime is he will want to find the longest possible subsequence, so you want to find that one before Jaime asks for it, that way he will be able to have a good rest.
Given the list of numbers Jaime created, find the size of the longest subsequence from Jaime's list such that if you multiply all the elements of the subsequence, the resulting integer number is a perfect square number.

Input

The first line of input contains a single integer N ($1 \leq N \leq 10^5$), the size of the list Jaime created. The second and last line in the input contains N integer numbers separated by space, representing each of the x_i numbers in Jaime's list ($2 \leq x_i \leq 10^{18}$). It is guaranteed that each of the numbers in Jaime's list are generated multiplying only prime numbers less than 30.

Output

Output a single line with an integer indicating the size of the longest subsequence whose product is a perfect square number.

Sample input 1	**Sample output 1**
3 12 3 7	2