Nice Clique

Given a sequence of n numbers, $D = (d_1, d_2, \ldots, d_n)$, what's the maximum size of a subsequence of D in which every pair is a *nice pair*?

The pair (a, b) is a nice pair iff at least one of the following condition holds.

1. The parity of the number of distinct prime divisors of a is equal to that of b. For example, 18 has two distinct prime divisors: 2 and 3.
2. The parity of the sum of all positive divisors of a is equal to that of b.

Input Format

The first line contains a single integer n. The second line contains n space-separated integers $d_1, d_2, \ldots, d_n$.

Constraints

- $1 \leq n \leq 200$
- $1 \leq d_i \leq 10^{15}$

Output Format

Print the maximum size of any subsequence of D in which every pair is a nice pair.

Sample Input 0

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4
2 3 6 8
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Sample Output 0

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3
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Explanation 0

dPrime divisors (count)	Divisors (sum)
22 (1)	1, 2 (3)
33 (1)	1, 3 (4)
62, 3 (2)	1, 2, 3, 6 (12)
82 (1)	1, 2, 4, 8 (15)

You can verify that the pairs $(d_1, d_2), (d_1, d_4), (d_2, d_3), (d_2, d_4)$ are nice, while (d_1, d_3) and (d_3, d_4) are not.

The largest subsequence of D in which all pairs are nice pairs is $(2, 3, 8)$ and its size is 3.