

Problem A. Square Root Partitioning

Input file: *standard input*
Output file: *standard output*
Time limit: 3 seconds
Memory limit: 256 mebibytes

Consider the following expression:

$$\sqrt{a_1} \pm \sqrt{a_2} \pm \dots \pm \sqrt{a_n} = 0.$$

Calculate the number of ways to replace each \pm with $+$ or $-$ so that it holds true.

Input

The first line of input contains a single integer n ($2 \leq n \leq 36$).

Second line of input contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^{10^5}$).

Output

Output a single integer: the answer to the problem.

Examples

standard input	standard output
3 2 2 8	1
4 4 9 25 49	0