

Problem B. Binomial

Input file: *standard input*
Output file: *standard output*
Time limit: 5 seconds
Memory limit: 512 mebibytes

There are people that won't be happy with solving a problem, unless the actual task is obscured by an elaborate and somewhat unnecessary story. If you are one of these people, then this problem is NOT for you.

You are given a sequence of non-negative integers a_1, a_2, \dots, a_n . You need to find the number of pairs (i, j) such that $1 \leq i, j \leq n$ and $\binom{a_i}{a_j}$ is odd.

Note that $\binom{n}{k}$ is the number of ways, disregarding order, that k objects can be chosen from among n objects. In particular, if $n < k$ then $\binom{n}{k} = 0$.

Input

The first line of input contains the number of test cases z ($1 \leq z \leq 10$). The descriptions of the test cases follow.

The first line of each test case contains the number of elements in the sequence n ($1 \leq n \leq 10^6$).

The second line contains n integers a_i ($1 \leq a_i \leq 10^6$) – the elements of the sequence.

Output

For each test case, output a single line which contains a single integer – the answer for the problem.

Example

standard input	standard output
2	4
3	9
1 5 6	
3	
1 1 1	