

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

C. Rock and Lever

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

"You must lift the dam. With a lever. I will give it to you.
You must block the canal. With a rock. I will not give the rock to you."

Danik urgently needs rock and lever! Obviously, the easiest way to get these things is to ask Hermit Lizard for them.

Hermit Lizard agreed to give Danik the lever. But to get a stone, Danik needs to solve the following task.

You are given a positive integer n , and an array a of positive integers. The task is to calculate the number of such pairs (i, j) that $i < j$ and $a_i \& a_j \geq a_i \oplus a_j$, where $\&$ denotes the **bitwise AND operation**, and \oplus denotes the **bitwise XOR operation**.

Danik has solved this task. But can you solve it?

Input

Each test contains multiple test cases.

The first line contains one positive integer t ($1 \leq t \leq 10$) denoting the number of test cases. Description of the test cases follows.

The first line of each test case contains one positive integer n ($1 \leq n \leq 10^5$) — length of the array.

The second line contains n positive integers a_i ($1 \leq a_i \leq 10^9$) — elements of the array.

It is guaranteed that the sum of n over all test cases does not exceed 10^5 .

Output

For every test case print one non-negative integer — the answer to the problem.

Example

input	Copy
5 5 1 4 3 7 10 3 1 1 1 4 6 2 5 3 2 2 4 1 1	
output	Copy
1 3 2 0 0	

Note

In the first test case there is only one pair: $(4, 7)$: for it $4 \& 7 = 4$, and $4 \oplus 7 = 3$.

In the second test case all pairs are good.

In the third test case there are two pairs: $(6, 5)$ and $(2, 3)$.

In the fourth test case there are no good pairs.

Topic Stream Mashup: Bitwise Operations

Finished

Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
268683807	Jul/04/2024 00:52	Accepted
268679317	Jul/03/2024 23:56	Accepted
268678864	Jul/03/2024 23:51	Accepted

→ Contest materials

• Topic tutorial video (en)