

Problem G. Rock and Lever

Time limit 1000 ms

Mem limit 262144 kB

"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.

Sample 1

Input	Output
5	1
5	3
1 4 3 7 10	2
3	0
1 1 1	0
4	
6 2 5 3	
2	
2 4	
1	
1	

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.