F. Equalize the Array

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Polycarp was gifted an array a of length n. Polycarp considers an array beautiful if there exists a number C, such that each number in the array occurs either zero or C times. Polycarp wants to remove some elements from the array a to make it beautiful.

For example, if $n = 6$ and $a = [1, 3, 2, 1, 4, 2]$, then the following options are possible to make the array a array beautiful:

- Polycarp removes elements at positions 2 and 5, array a becomes equal to $[1, 2, 1, 2]$;
- Polycarp removes elements at positions 1 and 6, array a becomes equal to $[3, 2, 1, 4]$;
- Polycarp removes elements at positions $1, 2$ and 6, array a becomes equal to $[2, 1, 4]$;

Help Polycarp determine the minimum number of elements to remove from the array a to make it beautiful.

Input

The first line contains one integer t ($1 \le t \le 10^4$) — the number of test cases. Then t test cases follow.

The first line of each test case consists of one integer n ($1 \le n \le 2 \cdot 10^5$) — the length of the array a.

The second line of each test case contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^9$) — array a.

It is guaranteed that the sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, output one integer — the minimum number of elements that Polycarp has to remove from the array a to make it beautiful.

Example

input Copy

```
3
6
1 3 2 1 4 2
4
100 100 4 100
8
1 2 3 3 3 2 6 6
```

output Copy

```
2
1
2
```