

B. Equalize

time limit per test: 1 second
memory limit per test: 256 megabytes

Vasya has two hobbies — adding permutations[†] to arrays and finding the most frequently occurring element. Recently, he found an array a and decided to find out the maximum number of elements equal to the same number in the array a that he can obtain after adding some permutation to the array a .

More formally, Vasya must choose exactly one permutation $p_1, p_2, p_3, \dots, p_n$ of length n , and then change the elements of the array a according to the rule $a_i := a_i + p_i$. After that, Vasya counts how many times each number occurs in the array a and takes the maximum of these values. You need to determine the maximum value he can obtain.

[†]A permutation of length n is an array consisting of n distinct integers from 1 to n in arbitrary order. For example, $[2, 3, 1, 5, 4]$ is a permutation, but $[1, 2, 2]$ is not a permutation (2 appears twice in the array), and $[1, 3, 4]$ is also not a permutation ($n = 3$ but there is 4 in the array).

Input

Each test consists of multiple test cases. The first line contains a single integer t ($1 \leq t \leq 2 \cdot 10^4$) — the number of test cases. Then follows the description of the test cases.

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

The second line of each test case contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^9$) — the elements of the 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 a single number — the maximum number of elements equal to the same number after the operation of adding a permutation.

Example

input	Copy
7 2 1 2 4 7 1 4 1 3 103 102 104 5 1 101 1 100 1 5 1 10 100 1000 1 2 3 1 3 1000000000 999999997 999999999	
output	Copy
2 2 3 2 1 1 2	

Note

In the first test case, it is optimal to choose $p = [2, 1]$. Then after applying the operation, the array a will be $[3, 3]$, in which the number 3 occurs twice, so the answer is 2.

In the second test case, one of the optimal options is $p = [2, 3, 1, 4]$. After applying the operation, the array a will be $[9, 4, 5, 5]$. Since the number 5 occurs twice, the answer is 2.

Codeforces Round 924 (Div. 2)

Finished

Practice

→ Virtual participation

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Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

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

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
260186008	May/10/2024 02:33	Accepted

→ Problem tags

binary search greedy sortings

two pointers *1200

No tag edit access

→ Contest materials

Announcement (en)

Tutorial (en)