

[HOME](#) [TOP](#) [CATALOG](#) [CONTESTS](#) [GYM](#) [PROBLEMSET](#) [GROUPS](#) [RATING](#) [EDU](#) [API](#) [CALENDAR](#) [HELP](#)
[PROBLEMS](#) [SUBMIT CODE](#) [MY SUBMISSIONS](#) [STATUS](#) [HACKS](#) [ROOM](#) [STANDINGS](#) [CUSTOM INVOCATION](#)

C. Trinity

 time limit per test: 2 seconds
 memory limit per test: 256 megabytes

You are given an array a of n elements a_1, a_2, \dots, a_n .

You can perform the following operation any number (possibly 0) of times:

- Choose two integers i and j , where $1 \leq i, j \leq n$, and assign $a_i := a_j$.

Find the minimum number of operations required to make the array a satisfy the condition:

- For every pairwise distinct triplet of indices (x, y, z) ($1 \leq x, y, z \leq n$, $x \neq y$, $y \neq z$, $x \neq z$), there exists a non-degenerate triangle with side lengths a_x , a_y and a_z , i.e. $a_x + a_y > a_z$, $a_y + a_z > a_x$ and $a_z + a_x > a_y$.

Input

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

The first line of each test case contains a single integer n ($3 \leq n \leq 2 \cdot 10^5$) — the number of elements in 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 integer — the minimum number of operations required.

Example

input	Copy
4 7 1 2 3 4 5 6 7 3 1 3 2 3 4 5 3 15 9 3 8 1 6 5 3 8 2 1 4 2 9 4 7	
output	Copy
3 1 0 8	

Note

In the first test case, one of the possible series of operations would be:

- Assign $a_1 := a_4 = 4$. The array will become $[4, 2, 3, 4, 5, 6, 7]$.
- Assign $a_2 := a_5 = 5$. The array will become $[4, 5, 3, 4, 5, 6, 7]$.
- Assign $a_7 := a_1 = 4$. The array will become $[4, 5, 3, 4, 5, 6, 4]$.

It can be proven that any triplet of elements with pairwise distinct indices in the final array forms a non-degenerate triangle, and there is no possible answer using less than 3 operations.

Codeforces Round 983 (Div. 2)

Contest is running

00:05:15

Contestant



→ Submit?

 Language: Python 3.8.10
Almost always, if you send a solution on PyPy, it works much faster

 Choose file: Choose File No file chosen

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

→ Last submissions

Submission	Time	Verdict
289273822	Nov/01/2024 19:15	Wrong answer on pretest 1

→ Score table

	Score
Problem A	274
Problem B	411
Problem C	685
Problem D	959
Problem E	1233
Problem F	1644
Successful hack	100
Unsuccessful hack	-50
Unsuccessful submission	-50
Resubmission	-50

* If you solve problem on 01:53 from the first attempt

In the second test case, we can assign $a_1 := a_2 = 3$ to make the array $a = [3, 3, 2]$.

In the third test case, since 3, 4 and 5 are valid side lengths of a triangle, we don't need to perform any operation to the array.

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