

# Team Formation



For an upcoming programming contest, Roy is forming some teams from the  $n$  students of his university. A team can have any number of contestants.

Roy knows the skill level of each contestant. To make the teams work as a unit, he should ensure that there is no skill gap between the contestants of the same team. In other words, if the skill level of a contestant is  $x$ , then he has either the lowest skill level in his team or there exists another contestant with skill level of  $x - 1$  in the same team. Also, no two contestants of the same team should have same skill level. Note that a contestant can write buggy code and thus can have a negative skill level.

The more contestants on the team, the more problems they can attempt at a time. So, Roy wants to form teams such that the smallest team is as large as possible.

## Input Format

The first line of input contains  $t$  ( $1 \leq t \leq 100$ ), the number of test cases.

Each case contains an integer  $n$  ( $0 \leq n \leq 10^5$ ), the number of contestants, followed by  $n$  space separated integers. The  $i^{th}$  integer denotes the skill level of  $i^{th}$  contestant. The absolute values of skill levels will not exceed  $10^9$ .

The total number of contestants in all cases will not exceed  $10^6$ .

## Output Format

For each test case, print the size of smallest team in a separate line.

## Sample Input

```
4
7 4 5 2 3 -4 -3 -5
1 -4
4 3 2 3 1
7 1 -2 -3 -4 2 0 -1
```

## Sample Output

```
3
1
1
7
```

## Explanation

For the first case, Roy can form two teams: one with contestants with skill levels  $\{-4, -3, -5\}$  and the other one with  $\{4, 5, 2, 3\}$ . The first group containing 3 members is the smallest.

In the second case, the only team is  $\{-4\}$

In the third case, the teams are  $\{3\}$ ,  $\{1, 2, 3\}$ , the size of the smaller group being 1.

In the last case, you can build a group containing all the contestants. The size of the group equals the total number of contestants.

## Timelimits

Timelimits for this challenge are given [here](#)

## Note

If  $N = 0$ , print 0.