

# Max Minus Min Equals Size (Hard)

Input file:           standard input  
Output file:         standard output  
Time limit:          1 second  
Memory limit:       256 megabytes

**This is the hard version of the problem. In this version,  $|a_i| \leq 10^9$  and there may be duplicates. You can only make hacks if both versions of the problem are solved.**

Su is preparing another lesson for her beloved students. She will give each student an **arbitrary** integer. Then, she will ask students to form groups according to the following rule:

- Two or more students can form a group only if the difference between the maximum and minimum elements in the group equals the group size.

In anticipation of the class, she wants to know the size of the largest possible group.

## Input

The first line of the input contains a single integer,  $t$  ( $1 \leq t \leq 10^4$ ) — the number of test cases.

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

The second line of each test case contains  $n$  integers,  $a_1, a_2, \dots, a_n$  ( $-10^9 \leq a_i \leq 10^9$ ) — the number assigned to each student.

## Output

For each test case, output a single integer — the size of the largest group, such that the difference between its maximum and minimum elements equals its size, or 0 if there is no such group.

## Example

standard input	standard output
4	0
2	4
0 1	5
4	4
0 1 1 -3	
6	
3 10 5 9 5 9	
6	
8 1 4 5 1 8	

## Note

In the first test case, there is no valid group.

In the second test case, the only valid group is  $\{-3, 0, 1, 1\}$ .

In the third test case, the largest group is  $\{5, 5, 9, 9, 10\}$ . Note that  $\{5, 5, 9, 9\}$  is also valid, but smaller.

In the fourth test case, there are two groups of maximum size:  $\{1, 1, 4, 5\}$  and  $\{4, 5, 8, 8\}$ .