Closest pairs in 1D V1

Given a array A of *n* integers (*n* > 1). Find the distance of the closest pair i.e. find the smallest value of $|A_i-A_j|$ for $i \neq j$

Input

The first line of input consists of a single number *t* which determines the number of tests.

For each test case, the first line will be *n* and the second line will be *n* integers seperated by spaces

Constraints

- $0 < t \leq 10$
- $1 < n \leq 100000$
- $-2 \times 10^9 \leq A_i \leq 2 \times 10^9$

Output

For each test case, print the distance of the closest pair.

Example

Input:
2
5
-2 -1 0 1 2
2
1 10

Output:

1
9