Problem Description

Given a sorted (increasing order) array with unique integer elements, write an algorithm to create a binary search tree with minimal height and return the head of that tree. The driver function will output the height of the tree. If it is not a valid BST output will be -1.

Input format

First line specifies the number of integers (N)
Next line contains N sorted integer values

Output format

The height of the constructed BST

Constraints

1 <= N <= 200000
1 <= Values <= 10^9

Sample Input 1

7
1 2 3 4 5 6 7

Sample Output 1

3

Explanation 1

We can a binary search tree with root 4 with minimum possible height 3