Shift sequence

Given a sorted sequence of integers which has been circularly shifted *k* positions to the right. For example, {49, 56, 90, 7, 14, 21, 28, 35, 42} is a sorted sequence that has been circularly shifted *k* = 3 positions, while {12, 5, 6, 7} has been shifted *k* = 1 position. Suppose you don't know *k*. Write a **check** function which runs in $O(\lg n)$ and find the largest number in the sequence.

Input

Contains 2 lines.

The first line of the input is an integer N. ($1 <= N <= 10^6$)

The second line contains N sorted integer, separated by a space.

Output

Print the maximum number of the sequence.

Print or write your code with comments in English and time complexity analysis. Adding your name and studentID in top right of your homework.