

Problem A. Maximum Difference

Time limit 2000 ms
Mem limit 1048576 kB

Problem Statement

You are given an integer sequence A of length N . Find the maximum absolute difference of two elements (with different indices) in A .

Constraints

- $2 \leq N \leq 100$
- $1 \leq A_i \leq 10^9$
- All values in input are integers.

Input

Input is given from Standard Input in the following format:

N
 $A_1 \ A_2 \ \dots \ A_N$

Output

Print the maximum absolute difference of two elements (with different indices) in A .

Sample 1

Input	Output
4 1 4 6 3	5

The maximum absolute difference of two elements is $A_3 - A_1 = 6 - 1 = 5$.

Sample 2

Input	Output
2 1000000000 1	9999999999

Sample 3

Input	Output
5 1 1 1 1 1	0