Problem G. G- sorting

Time limit   2000 ms
Mem limit   262144 kB

Problem Statement

It is only six months until Christmas, and AtCoDeer the reindeer is now planning his travel to deliver gifts.
There are N houses along *TopCoDeer street*. The i-th house is located at coordinate a_i. He has decided to deliver gifts to all these houses.
Find the minimum distance to be traveled when AtCoDeer can start and end his travel at any positions.

Constraints

- $1 \le N \le 100$
- $0 \le a_i \le 1000$
- a_i is an integer.

Input

Input is given from Standard Input in the following format:

```
N
a₁ a₂ ... aₙ
```

Output

Print the minimum distance to be traveled.

Sample 1

Input	Output
4 2 3 7 9	7

The travel distance of 7 can be achieved by starting at coordinate 9 and traveling straight to coordinate 2.
It is not possible to do with a travel distance of less than 7, and thus 7 is the minimum distance to be traveled.

Sample 2

Input	Output

Input	Output
8 3 1 4 1 5 9 2 6	8

There may be more than one house at a position.