

## Problem B. Traveling AtCoDeer Problem

**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

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

### Input

Input is given from Standard Input in the following format:

```
 $N$   
 $a_1$   $a_2$  ...  $a_N$ 
```

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

There may be more than one house at a position.