Profit Maximization

Emilia, a quantitative researcher, predicts how the closing share price of a stock moves over time.

She wants to find the maximum possible profit of a stock over a given period of time, using only **one** buy and **one** sell operation according to a given sequence of predicted share prices.

Constraints

- Short selling is not allowed.
- All of the predicted share prices are positive integers.

Input format

The first integer input is the number of predicted days.

The subsequent integer input is a sequence of positive integers. The element at position i refers to the predicted share price of a given stock on the ith day.

Output format

An integer which is the maximum possible profit with only **one** buy and **one** sell operation.

Examples

Example 1

Input

```
14 5 1 6 3 2 5 6 1 3 6 2 5 5 10
```

`Number of predicted days = 14`

`Sequence of predicted share prices = [5,1,6,3,2,5,6,1,3,6,2,5,5,10]`

Output

`9`

i.e. Buy the stock on day 1 for $1 and sell the stock on the last day at $10.

Example 2

Input

```
8 100 10 12 5 6 14 5 6
```

`Number of predicted days = 8`

`A sequence of predicted share prices = [100, 10, 12, 5, 6, 14, 5, 6]`

Output

`9`

i.e. Buy the stock on day 3 for $5 and sell the stock on day 5 at $14.