Minimum Loss

Lauren has a chart of distinct projected prices for a house over the next several years. She must buy the house in one year and sell it in another, and she must do so at a loss. She wants to minimize her financial loss.

For example, the house is valued at $price = [20, 15, 8, 2, 12]$ over the next $n = 5$ years. She can purchase the home in any year, but she must resell the house at a loss in one of the following years. Her minimum loss would be incurred by purchasing in year 2 at $price[1] = 15$ and reselling in year 5 at $price[4] = 12$.

Find and print the *minimum* amount of money Lauren must lose if she buys the house and resells it within the next n years.

Note: It's guaranteed that a valid answer exists.

Input Format

The first line contains an integer n, the number of years of house data.
The second line contains n space-separated long integers describing each $price[i]$.

Constraints

- $2 \leq n \leq 2 \times 10^5$
- $1 \leq price[i] \leq 10^{16}$
- All the prices are distinct.
- A valid answer exists.

Subtasks

- $2 \leq n \leq 1000$ for 50% of the maximum score.

Output Format

Print a single integer denoting the minimum amount of money Lauren must lose if she buys and resells the house within the next n years.

Sample Input 0

```
3
5 10 3
```

Sample Output 0

```
2
```

Explanation 0

Lauren buys the house in year 1 at $price[0] = 5$ and sells it in year 3 at $price[2] = 3$ for a minimal loss of $5 - 3 = 2$.

Sample Input 1

```
5
20 7 8 2 5
```

Sample Output 1

```
2
```

Explanation 1

Lauren buys the house in year 2 at $price[1] = 7$ and sells it in year 5 at $price[4] = 5$ for a minimal loss of $7 - 5 = 2$.