Buying and Selling Chocolate

Description

"Borman ★" (read: Borman Star) is a new student at the Faculty of Computer Science, University of Indonesia. At the moment Borman ★ is active in buying and selling chocolate for his living. As an amateur, Borman ★ often loses money because his buying price is higher than he sell. As a Borman-level siblings ★ are sad to see her and try to help her.

In buying and selling chocolate, chocolate can be bought one day and can only be sold on the day **after that** day.For example buying chocolate on the first day, then you can sell it on the second, third day, and so on. Since he is still a beginner, Borman ★ can only buy and sell chocolate **once** and he currently does not have any chocolate.Help him determine the maximum profit from buying and selling chocolate!

Input

The first line contains integers N which represents the number of days. The next line contains N numbers K_i which is the price of chocolate on day i.

Output

The highest profit gained by Borman ★.

Limitation

$1 \le N \le 500,000$
$1 \le K_i \le 1,000,000,000$

Example Input 1

```
11
4 3 5 2 3 10 7 3 2 3 4
```

Example Output 1

```
8
```

Example Input 2

```
4
4 3 2 1
```

Example Output 2

```
0
```

Explanation

In example 1, Borman ★ can only buy chocolate on the fourth day (when the price is 2) and sell it on the sixth day (when the price is 10) and gain 8 profit.

In example 2, Borman ★ cannot gain any profit at all because the price of chocolate continues to decline.