Maximum Profit

（maxprofit.cpp/.c）

Time Limit： 1 sec ， Memory Limit： 131072 KB

You can obtain profits from foreign exchange margin transactions. For example, if you buy 1000 dollar at a rate of 100 yen per dollar, and sell them at a rate of 108 yen per dollar, you can obtain (108 - 100) × 1000 = 8000 yen.

Write a program which reads values of a currency R_t at a certain time t ($t = 0, 1, 2, \ldots n - 1$), and reports the maximum value of $R_j - R_i$ where $j > i$.

Input （maxprofit.in）

The first line contains an integer n. In the following n lines, R_t ($t = 0, 1, 2, \ldots n - 1$) are given in order.

Output （maxprofit.out）

Print the maximum value in a line.

Constraints

- $2 \leq n \leq 200,000$
- $1 \leq R_t \leq 10^9$

Sample Input 1

```
6
5
3
1
3
4
3
```

Sample Output 1

```
3
```

Sample Input 2

```
3
4
3
2
```

Sample Output 2

```
-1
```