

LOGGING 2

There is a row of precious timber forests of n trees numbered from 1 to n and each tree has a monetary value of k . Leo is about to get married, so he wants to choose some cut trees to sell for money. But he is a person who loves nature very much, he does not want to destroy all the forests, so he complies with 2 conditions:

- Cut down at most one of three consecutive trees
- There are some trees of the rare species with the value $k < 0$, if the Beo is cut down, he will be fined a mount of money which is equal the absolute value of that tree.

Calculate the maximum amount of money Beo can earn.

Input

The first line contains a single integer n ($1 \leq n \leq 10^5$)

The next line contains n integers k_i ($1 \leq i \leq n$, $|k| \leq 10^9$) -value of each tree.

Output

A single integer, the maximum amount that Beo can get.

Example

Input:

```
6  
3 1 3 3 2 2
```

Output:

```
6
```