

Problem A. Alpha Country



Ballon:
Time limit: 1 seconds
Memory limit: 512 megabytes

In Alpha country there are n islands numbered from 1 to n . The islands are connected by a one-way bridge (island i can only go to island $i + 1$). On each island you arrive, you can receive a bonus or must pay a fine m_i dollars (m_i is a positive number represents the amount of money you will receive and m_i is a negative number represents the amount of money you will must pay a fine) (The current your amount of money can be negative).

Tuan is given two times to use magic by a magician, one time can teleport to any island (use the first time go to Alpha country), go to the next island sequentially and one time can return to his home anytime. However, He will have to send back to the magician an amount equal to the largest amount was collected on an island that he arrived. **Tuan** will use magic optimally to earn the maximum amount of money.

Print the maximum possible amount of money **Tuan** can earn.

Input

The first line contains a single integer n safety $1 \leq n \leq 10^5$ - the number of islands in Alpha country.

The second line contains n integers m_1, m_2, \dots, m_n safety $-500 \leq m_i \leq 500$ - the amount of money you can receive a bonus or pay a fine in island i .

Output

Print a single integer - the maximum possible amount of money **Tuan** can earn.

Examples

standard input	standard output
5 6 -5 7 3 -2	4
8 -1 5 -4 3 4 6 -10 4	8

Note

In the first test case, **Tuan** teleports to the 1st island, go to 2nd, 3rd, 4th island and go to home in 4th island. He earns $(6 - 5 + 7 + 3) = 11$ dollars and give magician 7 dollars, so he can earn 4 dollars.

In the second test case, **Tuan** teleports to 2nd island and exit in 6th island and he earn 8 dollars