

Problem Statement



You are given n coin bags. Each coin bag has some coins in it and you are allowed to take some coins. However, taking coins is not that simple.

You have to choose a range $[l, r]$ and an integer x which is less than or equal to the number of coins in all the bags from range l to r . You can take x coins from each of the bags in the range.

If you can do this only once, what is the maximum number of coins that you can be obtained if you choose l , r and x optimally?

Input Format

The first line contains an integer, N , denoting the number of coin bags.

Each line i of the N subsequent lines (where $0 \leq i < N$) contains an integer describing the number of coins in the coin bag

Constraints

$$1 \leq N \leq 10^4$$

$$1 \leq \text{arr}[i] \leq 10^4$$

Sample Input

Sample Output

Explanation

Sample Input	Sample Output	Explanation
4 1 2 3 4	6	The array is [1, 2, 3, 4]. You can choose the range (2, 4) and $x = 2$ or choose the range (3, 4) and $x = 3$. In both ways you can pick 6 coins.
5 4 3 3 4 4	15	The array is [4, 3, 3, 4, 4]. You can choose the range (1, 5) and $x = 3$, pick 3 from all the bags in the range to get 15 coins.
6 1 2 2 3 2 3	10	The array is [1, 2, 2, 3, 2, 3]. You can choose the range (2, 6) and $x = 2$, pick 2 from all the bags in the range to get 10 coins.