

Problem J. Strange Sum

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 512 megabytes

Given a sequence a_1, a_2, \dots, a_n .

You are going to select zero or more elements of a so that: if you select a_i , then in any interval of length i (formally, in $a[j, j + i - 1]$ for any $1 \leq j \leq n - i + 1$) you can select at most 2 elements.

Calculate the maximal sum of the elements you select.

Input

The first line contains an integer n ($2 \leq n \leq 10^5$).

The second line contains n integers a_1, a_2, \dots, a_n ($-10^9 \leq a_i \leq 10^9$).

Output

Output a single integer denoting the answer.

Examples

standard input	standard output
4 1 4 3 2	7
3 -10 -10 -10	0