E. Bear and Bowling

time limit per test: 6 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Limak is an old brown bear. He often goes bowling with his friends. Today he feels really good and tries to beat his own record!

For rolling a ball one gets a score — an integer (maybe negative) number of points. Score for i-th roll is multiplied by i and scores are summed up. So, for k rolls with scores $s_1, s_2, ..., s_k$, total score is . Total score is 0 if there were no rolls.

Limak made n rolls and got score a_i for i-th of them. He wants to maximize his total score and he came up with an interesting idea. He will cancel some rolls, saying that something distracted him or there was a strong wind.

Limak is able to cancel any number of rolls, maybe even all or none of them. Total score is calculated as if there were only non-canceled rolls. Look at the sample tests for clarification. What maximum total score can Limak get?

Input

The first line contains single integer n ($1 \le n \le 10^5$).

The second line contains n space-separated integers $a_1, a_2, ..., a_n$ ($|a_i| \le 10^7$) - scores for Limak's rolls.

Output

Print the maximum possible total score after choosing rolls to cancel.

Examples

input
5 -2 -8 0 5 -3

output
13

input
6 -10 20 -30 40 -50 60

output
400

Note

In first sample Limak should cancel rolls with scores -8 and -3. Then he is left with three rolls with scores $-2, 0, 5$. Total score is $1 \cdot (-2) + 2 \cdot 0 + 3 \cdot 5 = 13$.

In second sample Limak should cancel roll with score -50. Total score is $1 \cdot (-10) + 2 \cdot 20 + 3 \cdot (-30) + 4 \cdot 40 + 5 \cdot 60 = 400$.