

Strip

A2 / 100



Ivancho and his twin, Ivanka, found a very long and beautiful strip of cloth, which is N centimeters long and 1cm wide. They decided to cut it in 4 or less pieces such that one is for Ivancho and another one – for Ivanka.

It turned out, however, that since they need the cloth for different purposes, Ivancho wants his piece to be as bright as possible and Ivanka wants hers to be as dark as possible. Let S_i be the brightness of a part with size 1cm by 1cm, which starts i centimeters after the left end of the strip. If $S_i = 0$, that part is gray. The more S_i is, the more Ivancho would like it and Ivanka – not. If $S_i < 0$, it is dark and if $S_i > 0$, it is bright.

Since there is a pattern on the cloth and they want their pieces to “blend in” with each other, they decided to take pieces that are next to each other. They are planning to cut the strip A , B and C centimeters after its left edge. The piece from A to B is for Ivancho and the one from B to C – for Ivanka, like in the following picture:



Ivancho takes the light-gray/white part and Ivanka – the dark-gray/black one. It is allowed for A , B and/or C to coincide with one another and any of them can be equal to 0 or to N . Then they simply will not cut the cloth at some places and one or both of them may not get anything. The total happiness of Ivancho and Ivanka is equal to $S_A + S_{A+1} + \dots + S_{B-1} + (-S_B) + (-S_{B+1}) + \dots + (-S_{C-1})$. They need you to make a program **strip**, which calculates the optimal A, B and C .

Input

From the first line of the file `strip.in` the integer N is read. From the next line N integers - $S_0, S_1, \dots, S_N$ - are read.

Output

At the only line of the output file `strip.out` the program must print three integers – the optimal A, B and C . If there are multiple solutions, the program may print any of them.

Constraints

$1 \leq N \leq 100\,000$

$-100\,000\,000\,000 \leq S[i] \leq 100\,000\,000\,000$

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Example test

Input (strip.in)	Output (strip.out)
14 -92 -91 47 80 74 0 -22 91 -91 70 75 -38 -25 42	2 11 13

Explanation of the example

$47 + 80 + 74 + 0 + (-22) + 91 + (-91) + 70 + 75 - (-38) - (-25) = 387$