# Meow Swap

| | |
|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 1 second |
| Memory limit: | 256 megabytes |

Meow was given a permutation of $N$ integers. A permutation is a sequence of $N$ integers from 1 to $N$, in which all numbers occur exactly once. For example, [1], $[3, 5, 2, 1, 4]$, $[3, 1, 2]$ are permutations, and $[2, 3, 2]$, $[6, 3, 2]$, [0] are not.

Meow is required to swap the integers to make the sequence in decreasing order. During each swap, Meow could only swap the $i^{th}$ integer with either $(i-2)^{th}$ integer (if there is integer at index $i-2$) or $(i+2)^{th}$ integer (if there is integer at index $i+2$).

Find the minimum number of swaps that Meow needed to make the sequence in decreasing order. Output $-1$ if it is impossible.

## Input

The first line contains one integer, $N$ ($1 \leq N \leq 10^5$) — the number of integers Meow receives.

The second line contains $N$ space-separated integers $a_1, a_2, a_3 \ldots, a_N$ ($1 \leq a_i \leq N$) — the permutation of integers Meow receives.

## Output

Output a line contains one integer — the minimum number of swaps that Meow needed to make the sequence in decreasing order.

## Examples

| standard input | standard output |
|---|---|
| 5<br>1 2 3 4 5 | 4 |
| 3<br>1 3 2 | -1 |
| 10<br>2 7 8 3 10 9 6 5 4 1 | 8 |