

Problem București, Steaua București

Input file stdin
Output file stdout

Steaua București is the team with the greatest achievements in the history of Romanian football.

It has had incredible seasons. For example, in 1986, it managed to win the **UEFA Champions League**.

In 2024, the team won the **Romanian Championship**, and the staff organized a celebration.

After a few hours of fun, the coaches Elias and Mihai started thinking about interesting statistics from the team's history.

The two were analyzing the list of the team's points at the end of each season over the past N years. Then, Mihai posed the following problem to Elias:

We define a **change of maximum** as the appearance of a value greater than all previously encountered values. If we are at the first value, then this property is automatically fulfilled.

The question is: Given the list of the team's points at the end of each season over the past N years, what is the longest continuous sequence of values among these N with exactly K_1 **changes of maximum** when traversing the values from **left to right** and exactly K_2 **changes of maximum** when traversing the values from **right to left**?

Since the celebration was a great success, coaches Mihai and Elias cannot solve the problem on their own, so they are asking for your help.

Input

The first line contains the numbers N , K_1 , and K_2 , separated by a space.

The second line contains an array A of length N , representing the scores at the end of each season over the past N years, in chronological order, separated by a space.

Output

The output contains the **length** of the longest continuous sequence with the property described in the statement if there is at least one, or -1 otherwise.

Restrictions

- $1 \leq N \leq 1\,000\,000$
- $1 \leq K_1, K_2 \leq N$
- $1 \leq A_i \leq N, (1 \leq i \leq N)$



#	Points	Restrictions
1	20	$1 \leq N \leq 500$
2	25	$501 \leq N \leq 2\,000$
3	30	$A_i \neq A_j, (1 \leq i < j \leq N)$
4	25	No additional restrictions.

Examples

Input file	Output file
12 3 5 1 3 1 2 1 3 4 5 4 3 2 1	11

Explanations

There are 2 sequences where there are exactly 3 **changes of maximum** from left to right and exactly 5 **changes of maximum** from right to left: (2, 12), (6, 12). The longest among them is (2, 12), having a length of 11.