Problem G
NICESTR
Time limit: 0.5 seconds

A binary string is a string that contains only the characters 0 or 1. A binary string is called *nice* if for each character 1 in the string, the number of consecutive 0s from it to the nearest 1 character on the left or to the beginning of the string is equal to the number of consecutive 0s characters from it to the nearest 1 on the right or to the end of the string. That is, for each character 1, the number of consecutive 0s immediately to its left is equal to the number of consecutive 0s immediately to its right. For example, the string 0001000 is a nice string, while the string 001010 is not nice because to the left of the first character 1 there are two 0s and to the right of it there is only one character 0.

Given a binary string, your task is to delete some characters from it to make it a nice string. Print the length of the longest nice string that can be generated by deleting characters from the given string.

Input

- The first line contains an integer n, which is the length of the binary string ($1 \leq n \leq 500\,000$).
- The second line is a sequence of n characters, either 0 or 1. Make sure this line contains at least one 1 character.

Output

Output a line containing a single integer, the length of the longest possible string.

Sample Input	Sample Output
10 0000010100	7
4 1111	4
7 0101001	5

Note

From the string 0000010100, we can obtain the longest possible string 0001000 by removing the last character 1 and the first two characters 0s. The string 1111 is a nice string itself, so there is no need to delete any characters. From the string 0101001 we can delete the last two characters to get the nice string 01010.