

Problem L. Palindrome

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 256 mebibytes

Zenyk bought a string of length n , which contains only 0 and 1 characters. He wants to present it to Marichka, however he knows that she likes only palindromes (strings which read the same backward as forward) and she will be satisfied with just such a gift.

In one hour, Zenyk can change the string by moving any one of its characters to the end of the string. What is the minimum number of hours needed for Zenyk to prepare a gift for Marichka?

Input

The first line contains one integer n ($1 \leq n \leq 300$). The second line contains a string of length n containing only 0 and 1 characters.

Output

If Zenyk succeeds in preparing a gift then print one integer — the minimum number of hours.

If he can't do that print “-1” (without quotes).

Examples

standard input	standard output
7 1101001	1
4 1001	0
12 110100010011	3