Coins

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

There are N coins laying on the table in a row. They can lay rather tail or eagle. Possible operation is if there are $k \geq 1$ coins laying with eagle up, you can flip a coin with number k. How many operations will it take to flip all coins on the table tail up?

Input

First line contains one number - N ($1 \leq N \leq 10^5$). Next line contains N symbols, symbol number i is one if coin number i is laying eagle up, and zero if coin number i is laying tail up.

Output

Print one number — amount of operations needed to flip all coins tail up, or «`-1`» (without quotations) if it is impossible.

Examples

standard input	standard output
5 00101	12
3 101	4
1 1	1
5 00000	0