Mock CCC '22 1 S3 - IU

Time limit: 0.25s **Memory limit:** 1G

Kaity is the world's biggest IU fan. One day, she is bored and buys $2N$ magnets. N of them have the letter `I` on them and N of them have the letter `U` on them. She arranges them on the fridge to spell `IU` repeated N times.

Sadly, her archnemesis, Sylvia, has broken into her apartment and rearranged the magnets because she is not an IU fan.

Kaity wants to fix the magnets so that it spells IU repeatedly. Kaity doesn't have a lot of time so in a single operation, she can pick up one magnet and put it between any two adjacent magnets on the fridge or at either end.

Compute the minimum number of operations Kaity needs to make this happen.

Constraints

$1 \leq N \leq 10^5$

In tests worth 1 mark, $N \leq 10$.

In tests worth an additional 4 marks, $N \leq 10^3$.

Input Specification

The first line contains a single integer N.

The second line contains a string of $2N$ characters. It is guaranteed that N of them are `I` and N of them are `U`.

Output Specification

Output an integer X, the minimum number of operations needed to rearrange the magnets as desired. If it is impossible to do so, output `-1`.

Sample Input

```
2
IUUI
```

Sample Output

```
1
```