

Broken Traffic Lights (twolanes)

Filippo is on his way to university for an important exam, and he doesn't want to be late. The road from his house to the university is a two-lane, one-way road with N intersections.

- The first intersection is 0 km from his home.
- Each subsequent intersection is exactly 1 km from the previous one.

At each intersection, there are two independent traffic lights – one for each lane.


- If either light is green, cars can pass through (switching lanes if necessary).
- If both lights are red, cars must stop and wait.



Figure 1: A very unfortunate day.

Unfortunately, Valerio is upset because Filippo prefers studying over training with him for programming contests. As a prank, Valerio hacked the traffic lights, freezing their state, so the lights won't change anymore.

Now Filippo wants to find out: What is the maximum distance he can travel before getting stuck at a red light?

 Among the attachments of this task you may find a template file `twolanes.*` with a sample incomplete implementation.

Input

The input file consists of:

- a line containing integer N : the number of intersections.
- a line containing string L : the state of the lights in the left lane.
- a line containing string R : the state of the lights in the right lane.

The state of each traffic light is represented by a character, the character ‘G’ represents a green light, and the character ‘R’ represents a red light.

Output






The output file must contain a single line consisting of integer: the maximum distance Filippo can travel before he gets stuck at a red light. If Filippo can reach the university, print the integer N .

Constraints

- $1 \leq N \leq 100\,000$.
- $L_i, R_i \in \{ 'G', 'R' \}$ for each $i = 0 \dots N - 1$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

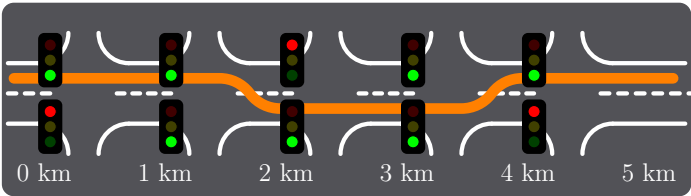
- Subtask 1 (0 points) Examples.

- Subtask 2 (20 points) $N \leq 15$.

- Subtask 3 (25 points) Both lanes have the same traffic light configuration.

- Subtask 4 (20 points) There is at most one red light in each lane.

- Subtask 5 (35 points) No additional constraints.


Examples

input	output
5 GGRGG RGGGR	5
10 GGGRGRRRRR GRRGRGGRGG	7

Explanation

In the **first sample case**, Filippo can reach the university without getting stuck at a red light.



In the **second sample case**, Filippo can travel at most 7 kilometers before he gets stuck at a red light.

