Problem B
Castle Design
Time Limit: 1.0 Seconds

The ICPC kingdom has decided to build a new castle. The boundary of the castle is designed as a *rectilinear* polygon with edges parallel to the x-axis or to the y-axis. To minimize the damage exposed by the enemy attack, the kingdom wants to minimize the perimeter of the rectilinear polygon. Let us go into more detail.

A rectilinear polygon P of n vertices with integer coordinates realizes a *turn sequence* S of length n of two letters `L` and `R` if there is a counterclockwise traverse along the boundary of P such that the turns at vertices of P, encountered during the traverse, form the turn sequence S; the left turn at a convex vertex corresponds to `L` and the right turn at a reflex vertex corresponds to `R`. For example, the rectilinear polygon in Figure B.1(a) realizes the turn sequence $S =$ `RLLRLLLRRLLRLRLL` of length 16. Another turn sequence $S =$ `LLRLLRLLRLRLLR` of length 14 can be realized by rectilinear polygons in Figure B.1(b) and B.1(c). Note that a turn sequence can have infinitely many realizations of rectilinear polygons in the integral plane.

A polygon is *simple* if there are no two edges that intersect except at the end vertices of adjacent edges. A polygon is *monotone* to an axis if its intersection with a line orthogonal to the axis is at most one segment. The monotone polygon is called 2-*monotone* if it is monotone to both x-axis and the y-axis, and 1-*monotone* if it is monotone to the one axis but not to the other axis. For example, the polygon in Figure B.1(a) is 1-monotone because it is monotone to only one axis, the x-axis, while the polygons in Figure B.1(b) and B.1(c) are 2-monotone. A turn sequence is also said to be t-*monotone* if any simple rectilinear polygon realizing the turn sequence is t-monotone where $t = 1, 2$.

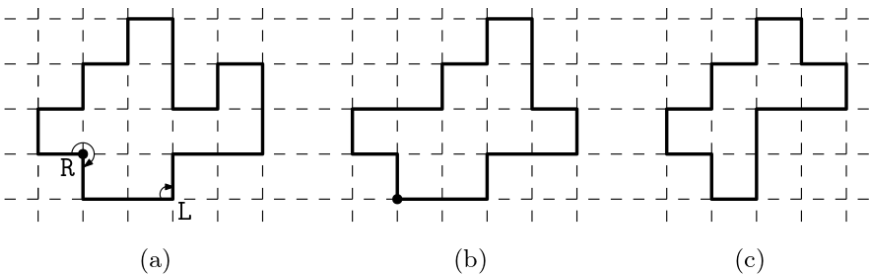


Figure B.1 (a) A simple 1-monotone rectilinear polygon realizing an 1-monotone turn sequence `RLLRLLLRRLLRLRLL` (starting from the marked vertex). (b) A simple 2-monotone rectilinear polygon realizing a 2-monotone turn sequence `LLRLLRLLRLRLLR` (starting from the marked vertex). (c) The 2-monotone rectilinear polygon with the minimum perimeter for the turn sequence in (b).

The perimeter of a rectilinear polygon is the sum of the length of its edges. The perimeter of the polygon in Figure B.1(b) is 18, but this is not minimum for `LLRLLRLLRLRLLR`. Its minimum perimeter should be 16 as in Figure B.1(c).

Given a t-monotone turn sequence of n turns for $t = 1, 2$, write a program to compute the minimum perimeter of simple t-monotone rectilinear polygons that realize the input t-monotone turn sequence.

Input

Your program is to read from standard input. The input is one line containing a string of n turns of two uppercase letters `L` and `R` that is a t-monotone turn sequence, where $t = 1, 2$ and $4 \leq n \leq 10^{t+3}$.

Output

Your program is to write to standard output. Print exactly one line. The line should contain the positive integer that is the minimum perimeter of simple t-monotone rectilinear polygons that realize the input t-monotone turn sequence for $t = 1, 2$.

The following shows sample input and output for four test cases.

Sample Input 1	Output for the Sample Input 1
LLRLLRLLRLRLLR	16

Sample Input 2	Output for the Sample Input 2
RLLRLLLRRLLRLRLL	20

Sample Input 3	Output for the Sample Input 3
LLRRLLLLRRLL	16

Sample Input 4	Output for the Sample Input 4
RLLRLLRLLRLL	12