

Problem D

Kindergarten Excursion

Problem ID: excursion

The kindergarten teachers had finally managed to get all the kids in a line for the walk to the bus station and the weekly excursion. What they hadn't thought of was the fact that today different kids were supposed to go to different excursions. They should walk as one line to the bus station, but to avoid total chaos when they arrive there, all the kids going to the zoo should be in the beginning of the line, the ones going to the lake should be in the middle and the rest, going to the science museum, should be in the end.

Since it takes a lot of time to get all the kids to stand in a line no kid may step out of the line. To get the line organized after excursion group, kids standing next to each other can swap places. Now the kindergarten teachers wonder, if they will have time to do this and still catch their bus.

Task

You will be given a sequence of numbers 0, 1, and 2, denoting the excursion destinations of each kid from first to last in the line. Pairs of adjacent kids can swap positions, and the line should be organized after destination number starting with 0 and ending with 2. What is the minimum number of swaps required to organize the line?

Input

The only line of input contains a string consisting of characters 0, 1 or 2, denoting the destinations of kids. The length of the string will be at most 1 000 000 characters.

Output

Output one line with one integer – the minimum number of swaps needed to get the kids in order.

Sample input 1	Sample output 1
10210	5