

Problem B. Bits Are Dangerous

Input file: bad.in
Output file: bad.out
Time limit: 2 seconds
Memory limit: 256 megabytes

Do you think that escaping a dream is easy? This is not the case when the dream is about bits.

You've surely read too much about bit theory yesterday, but this doesn't matter now as the only thing you want to do is to escape from the dream. You've probably found the best *special* string incorrectly... or they've just cheated you. You still have a long string of bits in front of your closed eyes.

Then you realize that you have an ability to change the leftmost bit of this string from 0 to 1 or from 1 to 0. It takes you exactly four seconds, but you can!

Then you realize that you can also shift this string cyclically, one position to the left or one position to the right. Either of the actions takes you a whopping total of seven seconds in this strange dream.

Something tells you that those 1-bits in the string are what's keeping you in the dream. As this might be true, you decide to turn the string into a string of all zeroes — you know that you have everything required for that.

But how much time would it take you if you acted optimally?

Input

The only line of the input file contains S ($2 \leq |S| \leq 2 \cdot 10^5$) — the string consisting of zeroes and ones.

Output

Output the sought minimum time you need to turn S into a string of all zeroes, in seconds.

Examples

bad.in	bad.out
11001	33
01101010	58
1000110101	62
011010100011	94
0000	0

Note

In the first test case, the optimal strategy is the following: change the leftmost bit to get 01001, shift the string cyclically to the left to get 10010, change the leftmost bit to get 00010, shift the string cyclically to the right to get 00001, shift the string cyclically to the right (again) to get 10000, and then change the leftmost bit to get 00000. Three changes and three cyclic shifts would take you exactly 33 seconds.