

## E. Beautiful Decomposition

time limit per test: 2 seconds  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

Valera considers a number *beautiful*, if it equals  $2^k$  or  $-2^k$  for some integer  $k$  ( $k \geq 0$ ). Recently, the math teacher asked Valera to represent number  $n$  as the sum of beautiful numbers. As Valera is really greedy, he wants to complete the task using as few beautiful numbers as possible.

Help Valera and find, how many numbers he is going to need. In other words, if you look at all decompositions of the number  $n$  into beautiful summands, you need to find the size of the decomposition which has the fewest summands.

### Input

The first line contains string  $s$  ( $1 \leq |s| \leq 10^6$ ), that is the binary representation of number  $n$  without leading zeroes ( $n > 0$ ).

### Output

Print a single integer — the minimum amount of beautiful numbers that give a total of  $n$ .

### Examples

<b>input</b>
10
<b>output</b>
1

  

<b>input</b>
111
<b>output</b>
2

  

<b>input</b>
1101101
<b>output</b>
4

### Note

In the first sample  $n = 2$  is a beautiful number.

In the second sample  $n = 7$  and Valera can decompose it into sum  $2^3 + (-2^0)$ .

In the third sample  $n = 109$  can be decomposed into the sum of four summands as follows:  $2^7 + (-2^4) + (-2^2) + 2^0$ .