4420 Game U-turn

Game U-turn is a card game of patience, played by a single player. Given a sequence of cards with some cards face up and others face down at arbitrary positions, a player is required to perform a series of operation called U-turn to make all cards face up without altering positions of cards in the sequence. A U-turn operation is performed on a sub-string of cards of any length to u-turn the face of each card in the sub-string, i.e., if the face of a card is up then put it down and if it is down then put it up, without altering positions of cards in the sub-string. The effort of a U-turn operation is the length of the sub-string on which the operation is performed. The series of U-turns should be such that the effort of each U-turn operation is distinct and the total effort of the series of operations is minimum.

Write a program to find the total minimum effort required to make all cards of a given sequence face up using a series of U-turn operation. Assume that the sequence of cards is represented by a string of '0's and '1's where a zero represents a card with face up and a one represents a card with face down.

Input

Input may contain multiple test cases.

Each test case has a single input line containing a string of '0's and '1's. The length of the string is fifteen or less.

Input terminates with a line containing '0' as the input for a test case.

Output

For each test case, print the total minimum effort required.

Sample Input

```
1000101
001100010
1010100000
0
```

Sample Output

```
9
3
7
```