

Edit Distance Again

As any experienced programmer must know the famous problem of "Edit Distance", however this problem is considered an "alternating chain" if you have alternately made case sensitive.

Example: "AaAaAbB" "B" "a" "aBaCdEf"

Alternating chains are considered in our problem.

We only have one operation that is permitted in exchange for a lower or upper case Latin letter.

Given a string giving the minimum number of changes to be considered an alternating chain.

Input

A string with no spaces line containing only uppercase and lowercase letters, one for each line of maximum length 10^3 until end of file

Output

For each line print the minimum number of changes to the chain is a "chain alternately"

Example

Input:

AaAaB

ABaa

a

Output:

0

2

0