

D. « The Pirate Alphabet »

Problème

The pirates, always trying to be non-conformists, use a different alphabet than the rest of us. But, not creative enough to make their own one, they decided to simply change the order of letters.

The pirate alphabet starts with all the vowels, then the consonants :

a e i o u y b c d f g h j k l m n
p q r s t v w x z

Great captains like you like to play letter games to show how superior they are in comparison to their illiterate subordinates. But, as you have neither the patience nor the intelligence to play games like Scrabble, you play the following game :

- A game leader chooses a sequence S of N letters ;
- Each player shall erase and insert letters wherever they want, until the sequence becomes the pirate alphabet ;
- The players can insert any letter, even if doesn't appear in the given sequence ;
- They can erase as many letters as they wish, but for each letter they insert, they have to give one coin ;
- The players who obtained the pirate alphabet with a minimum of insertions share the money.

You want, given any sequence, to be able to find out the minimum number of letters you need to insert to get the pirate alphabet, so you are sure to win everytime, get all the money, and show to all the other captains that **you** are the boss.

Input

- On a single line, the string S of size $1 \leq N \leq 5000$, with only lower-case letters.



The Pirate Alphabet

Output

- An integer : the minimum number of letters you need to insert in the sequence to get the pirate alphabet, given that you can erase as many letters as you wish.

Examples

Example 1

Input	Output
aeiiobdfa	19

You can erase an i and the second a, keep aeio bdf in order and insert the 19 missing letters.

Example 2

Input	Output
azertyuiopqsdghjklmwxcvbn	12

Example 3

Input	Output
zxwvtsrqpnmlkjhgfdcbuyoiea	25

Exemple 4

Input	Output
<p>pmolikuhjgvbcfdrtftgyhuuyutyyres zqertrdfghyghfghjhjgvghjklmopiu bvfdrtreszqsedrftgyujioojuyugfg cvbnjkopmlpoiuygfgvvhbghgvnbcvxc bnhgytdrserzqzesqzersresdfgyhgvh gjhkujlmpoiuytfgcvbcxvserzsfdgcb vnjhgf rteeqzesrdtyuioplkhvcfdxr tyuilmopiuygfgcvbhjyutrdfghjyut redfghjklkmpo</p>	5