Name Changes

The Government of New Brunswick has had trouble lately ever since the new Kanye West album dropped. They're experiencing a problem with too many people wanting to change their names to crazy things like Kanye and Yeezus, so they've come up with a silly solution to try to minimize the changes to their databases. They've decided to charge you to change your name based on the number of differences between your old name and the new one you wish to change it to.

You are charged one dollar to insert/delete a letter to your old name, and two to substitute one letter for another. (Note that the changes are case-insensitive).

Your friends have given you possible names they'd like to change theirs to, and because they are all poor university students they want to know which is their cheapest option and how much they'll have to pay for their sweet new name. The list of names is in order of preference, so if two options will cost them the same amount, they'll want the option that occurred earlier in the list.

Input
There are several test cases in the input. Each case includes one of your friend's original names, followed by three possibilities they'd like to change it to. The end of the input is reached when the original name of your friend is 'end'.

Output
For every test case, print one line that consists of your friend's cheapest name option, a colon, a single space character, and how many dollars it would cost them to change it to that name.

Sample Input
```
Smith
Smithey
Smitty
Smiti
Corey
Cornye
Yeezey
Corwest
end
```

Sample Output
```
Smithey: 2
Cornye: 3
```