The Webster Ranking

input file: `webster.in` output file: `webster.out`

Mr. Webster is teaching his elementary school students how to sort lists of words. He knows some lists of words are harder to sort than other lists, so he's asked you to write a program to rate different lists of words for him.

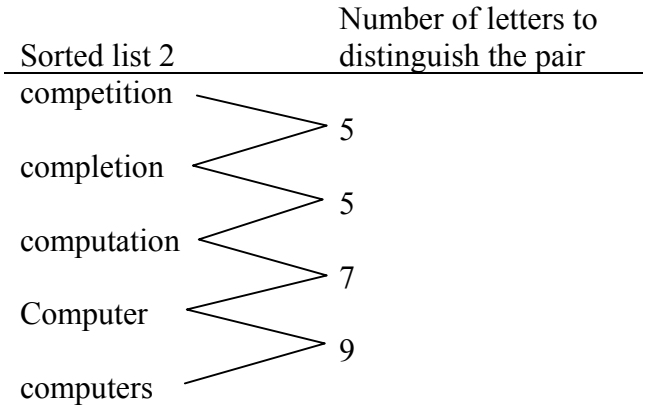
The difficulty of sorting words depends on two things: the length of the list and the difference between the words. For example, consider the two lists:

List 1	List 2
duck cat mouse	Computer computation completion computers competition

The first list is significantly easier to put into alphabetical order than is the second list. It has fewer words and you only need to check the first letter of each to determine the relative ordering.

Mr. Webster has asked you to write a program to compute the difficulty of sorting any list of strings. The ranking is defined to be the sum of the number of word in the list and, for each pair of adjacent items in the sorted list, the number of letters it takes to distinguish between the two items. The Webster ranking of List 1 is then 5: there are 3 words in the list and it takes just one letter to distinguish between the pair 'cat' and 'duck' and the pair 'duck' and 'mouse.'

To compute the Webster Ranking of List 2, look at the sorted list:



There are five words in the list, so the Webster Ranking of List 2 is 31 = (5+5+7+9)+5.

Input

The input to your program will be one or more lists of words. The last word in each list is LAST and should not be processed. There will be between 0 and 100 words in each list. Each list has words arranged one per line, starting in the first column of each line. A word is a sequence of 1 to 25 letters. Case is not significant. Words will not be duplicated in any list.

The end of all input is indicated by a set containing *just* the word END. This list should not be processed.

Output

For each list, print the list number and the Webster ranking of the set in the format shown below. Have a blank line after each line of output.

Sample Input

```
duck
cat
mouse
LAST
Computer
computation
completion
computers
competition
Last
End
last
```

Sample Output (corresponding to the sample input)

```
List 1 has Webster ranking = 5

List 2 has Webster ranking = 31
```