

## 963 Spelling Corrector

We want to develop an automatic spelling corrector. The spelling corrector should detect words that are not present in its dictionary, and replace them with the nearest one.

The distance between an input word and a dictionary word is computed taking into account deletions, insertions and substitutions of characters: an inserted or deleted character is penalized with 3 points, a character substitution is penalized with 5 points, while matches are not penalized.

Each word can have from 1 to 9 characters. Only the lowercase characters from 'a' to 'z' are allowed.

If multiple words in the dictionary have the same distance to the input word, they should be ranked in lexicographic order and the first one should be selected.

### Input

**The input will contain several test cases, each of them as described below. Consecutive test cases are separated by a single blank line.**

The first line in the input contains an integer  $n$  specifying the number of words in the dictionary. The following  $n$  lines contain the dictionary: one word per line. The dictionary is sorted in lexicographic order.

The dictionary is followed by a line containing  $m$ , the number of words of text. The text consists of lines of 10 words separated by white space, except the last one that can have less words.

### Output

**For each test case, the output must follow the description below. The outputs of two consecutive cases will be separated by a blank line.**

The output consists of the corrected text:  $m$  words, presented in lines with 10 words, except the last one that can be shorter.

### Sample Input

```
5
ate
carrot
rabbit
the
white
6
the white rabbit ate ate carott

20
a
abbey
adapted
ago
almost
but
clumsy
had
```

he  
joined  
living  
manuel  
monk  
not  
of  
that  
the  
to  
way  
year  
22

the clumsy monk manuel had joined the abey almost a  
year ago but he had not adapted to that way  
of leaving

### Sample Output

the white rabbit ate ate carrot

the clumsy monk manuel had joined the abbey almost a  
year ago but he had not adapted to that way  
of living