

Problem LEGACY: Legacy

The Knights Templar has finally retrieved the legacy of their almighty founder Hugo von Payens. Hugo von Payens was not only a powerful French knight but also a wise academic that could predict future events. He wrote down all his prophecies in a book that was the most valuable resource the Knights Templar possessed. This book holds the key to absolute power. Unfortunately, it is not only encrypted. But even worse, because over centuries monks in monasteries all over the ancient world have copied the text, it is full of spelling mistakes.

Before the decryption department of the NSA can decipher the book, you have to reconstruct the original text. The text has been transcribed over and over again and is therefore full of spelling mistakes. You have to match each word that differs in the various distinct transcriptions to a dictionary of possible words, the word that is most likely. To do so, you assign a penalty point for each character that has been altered, added, or removed in order to transform the word in the text to a word in the dictionary. The word with the fewest points is most likely to be the correct word.

Input

The first line of input contains the number of test cases (at most 100). The first line of each such test case holds the word that has to be matched to the dictionary. The following line holds the number n ($0 < n \leq 5,000$) of dictionary entries that follow. Each of the following n lines holds one word of the dictionary. All words are ASCII-7 encoded, do not contain any whitespace and have at most 500 characters.

Output

For each test case, print the word you have compared against the dictionary, the dictionary word that is most similar and the number of characters that have to be changed (i.e. deleted, inserted, or altered). If the result is ambiguous, print the dictionary word, that occurs first in the list. See the Sample Output for the exact output format.

Sample Input 1

```
2
pouer
3
our
shower
power
via
4
wia
why
tia
via
```

Sample Output 1

```
best match for 'pouer' is 'power' with score 1
best match for 'via' is 'via' with score 0
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