

Alien Language

Aliens started their journey towards our earth. They somehow mastered our English language through a dictionary. However, they were unable to understand the concept of spaces present between words in a sentence.

They are continuously sending messages to our earth but it has to be converted to normal form (i.e if the aliens msg is **helloworld** it has to be translated into **hello world** with help of provided dictionary). Scientist believes that these messages consist a very valuable information about how they planning to attack us. And it is guaranteed that aliens communicate only with the words present in the dictionary.

This small planet needs your help.... protect it with your skill.

Input

- The first line of the input contains an integer **N** denoting the size of dictionary.
- The next following **N** lines consist of words present in dictionary(all letters are lowercase)
- The next line of the input contains an integer **T** denoting no.of alien language words that are need to be converted
- **See sample input and output for better understanding**

Output

- For each test case, output a single line which contains 2 space separated words that are present in the dictionary.
- In case of multiple answers make sure the 1st word length to be minimum

Constraints

- $1 \leq N \leq 10^5$
- $1 \leq |W| \leq 20$
- $1 \leq T \leq 1000$
- $1 \leq |A| \leq 40$
- where $|W|$ denotes the length of the largest string present in the dictionary and $|A|$ denotes the length of the string from alien language

Example

Input:

6

coding
code
wreck
dechef
co
chef
2
codingwreck
codechef

Output:

coding wreck
co dechef