Slogan

A famous company wants to create a new slogan and there was a tender for it. The company provided guidelines and one of them is that every slogan must be generated from predefined words which was provided by the company itself. Every word can be used more than once.

The slogan must be sent concatenated without spaces between the words in order to save space (strange indeed). Many people sent suggestions and the company has to check them all and this is very heavy load for the staff.

So your job is to automate the process. You will receive the number of all the received suggestions **N**. On the next **2*N** lines you will receive allowed words to use and the suggestion.

Input

- Read from the standard input
- On the first line, find the number **N**
  - The number of suggestions to be processed
- On the next **2*N** rows, find the **words and slogans The words are separated by space.**

Output

- Print on the standard output
- Print result of every suggestion in form of separated words which forms the slogan or **NOT VALID** if there is no slogan formed. - If there are multiple solutions, print any of them

Constraints

- 1 <= N <= 10
- 1 <= slogan.length <= 2000
- there are only lower case letters in the input

Sample tests

Input

```
2
we telerik academy are
wearetelerikacademy
we are telerik academy
wearenottelerikacademy
```

Output

```
we are telerik academy
NOT VALID
```

Explanation

- The number is 2 so the next 4 lines contains two slogan suggestions and words allowed
    1. First
        - words allowed: **["we", "telerik", "academy", "are"]**
        - slogan suggested: **wearetelerikacademy**
        - the slogan could be created from **["we", "are", "telerik", "academy"]**
    2. Second
        - words allowed: **["we", "are", "telerik", "academy"]**
        - slogan suggested: **wearenottelerikacademy**
        - the slogan can NOT be created from because we are missing the word **"not"**

Input

```
2
test it here now
testhere
hello world my
hellomyworldhello
```

Output

```
test here
hello my world hello
```