I AM GROOT

To make it easier to talk with Groot, the Guardians decide to make a "I AM GROOT" dictionary with Rocket's help ^.^

The dictionary consists of n pairs of *phrases*. The first phrase (key) is what Groot says, while the second phrase (value) is the meaning of the first phrase.

The key is can consist of any combination of the words *I*, *AM* & *GROOT*. Moreover, the number of times each letter is repeated in each word is also variable (eg: III, I AAM, AM GROOOOOT, IIIII AAM GROT etc).

During translation, if we have a key that consists of multiple phrases that also exist as seperate keys in the dictionary, then the meaning of the key as a whole will be considered and not the meaning of the phrases individually.

Help them translate what Groot is saying with the help of the provided dictionary!

Input Format

The first line will be an integer n which is the number of entries in the dictionary.

The next n lines will have the dictionary entries in the format **key:value** (with no space between or after the "**:**" . The key and value phrases may contain spaces).

The last line will have the phrase that you have to translate.

Constraints

$1 \leq n \leq 21$

Output Format

Print a single string s which is the translation of the phrase at the end of the input.

Sample Input 0

```
4
I AM:HELLO
GROOT:WORLD
III:BUH
AM:BYE
III AM GROOT
```

Sample Output 0

```
BUH BYE WORLD
```

Explanation 0

n = 4 (from first line). This means that there are 4 entries in the dictionary ~.~

From the next four lines, we can gather that the entries are

- "I AM" means "HELLO"

- "GROOT" means "WORLD"

- "III" means "BUH"

- "AM" means "BYE"

The phrase we have to traslate is "III AM GROOT". Now, from above dictionary, *III* translates to *BUH*, *AM* tranlates to *BYE* & *GROOT* translates to *WORLD*. Therefore, the translation of "III AM GROOT" is "BUH BYE WORLD"

^_^

Sample Input 1

```
5
III AM GROOT:HELLO
I AM:GET LOST
GROOT:QUILL
I:BUH
AM:BYE
I AM GROOT
```

Sample Output 1

```
GET LOST QUILL
```

Explanation 1

n = 5 (from first line). This means that there are 5 entries in the dictionary ~.~

From the next four lines, we can gather that the entries are

- "III AM GROOT" means "HELLO"

- "I AM" means "GET LOST"

- "GROOT" means "QUILL"

- "I" means "BUH"

- "AM" means "BYE"

The phrase we have to traslate is "I AM GROOT". Now, from above dictionary, *I AM* translates to *GET LOST* & *GROOT* translates to *QUILL*. The translation of the phrase "I AM" takes precedence over the translation of the phrases "I" & "AM" seperately.

Therefore, the translation of "I AM GROOT" is "GET LOST QUILL".

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