

Where Does it Fit?

For an input word, determine whether it is alphabetically located before the word EXERCISE, after the word MUSCLES, or between EXERCISES and MUSCLES.

Input

The first line of the data set for this problem is an integer that represents the number of words in the list. Each word is on a separate line.

Output

The output is to be formatted exactly like that for the sample output given below.

Example

Input:

```
4
REST
ACHE
STRETCH
GYM
```

Output:

```
REST IS AFTER MUSCLES
ACHE IS BEFORE EXERCISE
STRETCH IS AFTER MUSCLES
GYM IS BETWEEN EXERCISE AND MUSCLES
```