

Lexicographic sort

Given alphabet A and a list of words, sort the list according to the lexicographic order induced by A .

Input

The first line of input contains t , the number of tests.

Each test begins with a line with alphabet A , which consists of lowercase letters arbitrary chosen from the Latin alphabet. The next line contains an integer $n < 100\,000$ - the number of words. The subsequent n contain one word each, which is not longer than 1 000 letters. Additionally, you can assume that the total number of letters in all words of each test does not exceed $4 \cdot 10^6$.

There is an empty line after each test.

Output

For each test output the sorted list of words in successive lines.

Score

The score is equal to the length of the source code of your program.

Example

Input:

```
2
re
3
ere
rer
re
```

```
balujemy
```

```
5
bel
luba
lej
bal
leje
```

Output:

```
re
rer
ere
```

```
bal
bel
luba
lej
leje
```

Warning: large Input/Output data, be careful with certain languages