Legends have been told for more than a millennia of a magical stone, where all the gods‘ names are written. Goshko found it. On the stone n god names are written, all of them containing lowercase Latin letters.

Now everybody who meets Goshko asks him the question „How godly is my name?“. Godliness of a human name is the amount of god names for which the human name is either a prefix or a suffix. Goshko has been asked q questions, all of them being one human name, containing lowercase Latin letters.

Write a program which receives n, the god names, q, the human names and answers every single question.

**Input**

The first line of the file **wordstone.in** contains n – the number of god names on the stone.

The next n lines contain one god name, which is made up of lowercase Latin letters with no intervals between them.

The next line contains q – the number of human names.

The next q lines contain one human name which is made up of lowercase Latin letters with no intervals between them.

**Output**

In the file **wordstone.out** print q lines – all of them containing one number: the godliness of the human names in the order of the input.

**Constraints**

$$1\leq n, q\leq 5\*10^{4}$$

$$1 \leq sn, sq\leq 1.5\*10^{6} , where sn is the sum of the lenghts of the god names $$

$$and sq is the sum of the lenghts of the human names. $$

**Time Limit: 0.6 sec.**

**Memory Limit: 128 MB.**

**Sample test**

|  |  |
| --- | --- |
| **Input (wordstone.in)** | **Output (wordstone.out)** |
| 6petardenizishtarzeusshivaanubis3petiss | 123 |