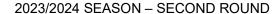# Wordstone

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.

Wordstone

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Sample test

Input (wordstone.in)	Output (wordstone.out)
6	1
petar	2
deniz	3
ishtar	
zeus	
shiva	
anubis	
3	
pet	
is	
s	