

Little Matej is solving an OOP (Object-oriented programming) laboratory exercise and he's having trouble with solving one subtask.

He is given a set that contains N words. He is also given Q queries where each query is one pattern. A pattern consists of a single character "*" and lowercase letters of the English alphabet. For example, "*", "kul*to", "ana*".

A pattern is said to cover a word if such an array of letters (**which can be empty**) exists that, when replacing the character "*", the pattern and the word become completely identical. It is necessary to output how many words each pattern covers.

INPUT

The first line of input contains two integers N and Q ($1 \leq N, Q \leq 100\,000$).

Each of the following N lines contains a word that consists of lowercase letters of the English alphabet.

Each of the following Q lines contains a pattern for which you need to output how many words from the first set it covers.

The total number of characters will be less than 3 000 000.

SCORING

In test cases worth 40% of total points, it will additionally hold $1 \leq N, Q \leq 1000$.

OUTPUT

Output Q lines, the k^{th} line containing the number of words that the k^{th} pattern covers.

SAMPLE TESTS

input 3 3 aaa abc aba a*a aaa* *aaa	input 5 3 eedecc ebdecb eaba ebcddc eb e* *dca e*c
output 2 1 1	output 5 0 2