

Problem J. Jong Hyok and String

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 256 mebibytes

Jong Hyok loves strings consisting of lowercase English letters. One day, he gave a problem to his friend, which happened to be... you! He wrote down n strings P_1, P_2, \dots, P_n in front of you, and then asked m questions.

Consider a string S . Define the *StrangeSet*(S) as the set of all pairs (i, j) such that S occurs in P_i as a substring ending at position j .

When asking question number k , Jong Hyok gives you a string Q_k . You must find the number of different strings T such that *StrangeSet*(Q_k) = *StrangeSet*(T) and T is a substring of at least one of the given n strings.

Input

The first line of input contains two integers n and m ($1 \leq n \leq 10^5$, $1 \leq m \leq 5 \cdot 10^5$).

The next n lines contain strings P_1, P_2, \dots, P_n , one per line ($1 \leq |P_i| \leq 10^5$).

The following m lines contain strings Q_1, Q_2, \dots, Q_m , one per line ($1 \leq |Q_k| \leq 10^5$).

All $n + m$ strings consist of lowercase English letters.

The sum of all $|P_i|$ in the input does not exceed 10^5 .

The sum of all $|P_i|$ and all $|Q_k|$ in the input is at most $2 \cdot 10^6$.

Output

For each question, print one integer on a separate line: the answer to this question.

Example

standard input	standard output
2 2	1
aba	2
ab	
a	
ab	