

G. Most Common Suffix

time limit per test: 1 second

memory limit per test: 512 megabytes

You are given n strings, and q queries. For each query i , your task is to find the most common suffix of length x_i , you need to print how common it is.

The suffix i (or the i^{th} suffix) of a string is a special case of substring that goes from the i^{th} character of the string up to the last character of the string. For example, the 4^{th} suffix of "development" is "lopment", the 7^{th} suffix of "development" is "ment" (0-based indexing).

Input

The first line contains an integer T ($1 \leq T \leq 75$), where T is the number of test cases.

The first line of each test case contains two integers n and q ($1 \leq n, q \leq 10^4$), where n is the number of strings, and q is the number of queries.

Then n lines follow, each line contains a string s , giving the strings. All strings are non-empty consisting of lowercase English letters.

Then q lines follow, each line contains an integer x ($1 \leq x \leq m$), giving the queries. Where m equals the length of the longest string among the given n strings.

The total length of strings in each test case does not exceed 10^5 .

Output

For each query, print a single line containing the answer.

Example

input	Copy
1 5 4 abccba abddba xa abdcba aneverknow 1 2 4 3	
output	Copy
4 3 1 2	


Note

As input/output can reach huge size it is recommended to use fast input/output methods: for example, prefer to use `scanf/printf` instead of `cin/cout` in C++, prefer to use `BufferedReader/PrintWriter` instead of `Scanner/System.out` in Java.


2017 JUST Programming Contest 3.0

Finished

Practice



→ About Contest



Contest website

→ Virtual participation

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Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
300921772	Jan/14/2025 08:28	Accepted
300920566	Jan/14/2025 08:15	Accepted
300920080	Jan/14/2025 08:10	Accepted
300919698	Jan/14/2025 08:06	Wrong answer on test 2
300919416	Jan/14/2025 08:03	Wrong answer on test 2
300919217	Jan/14/2025 08:00	Wrong answer on test 2
300918882	Jan/14/2025 07:56	Memory limit exceeded on test 2