❧ WORDSEARCH ❧

Find the N given words in an $M \times M$ grid. The words may appear in any of the 8 major directions (vertical, horizontal, or diagonal; forwards or backwards). Exactly one word does not appear in the grid. Which one?

Input

The first line contains an integer M ($1 \leqslant N \leqslant 20$), the size of the grid. Each of the next M lines contains a string of length M representing each row of the grid in order. The next line contains an integer N ($1 \leqslant N \leqslant 20$), the number of words to find. Each of the next N lines contains a word to find, which is a string of length at most M. All characters in the grid and in the words to find are uppercase letters (A–Z).

Output

Output the word that does not appear in the grid.

Example

Input	Output
6 HICPSK OGEUFB DIHGOI MVPARY REVENV GORNNA 5 NEVER GONNA GIVE YOU UP	GONNA