Input

The first line of input contains two integers m ($1 \leq m \leq 500$) and n ($1 \leq n \leq 50$), where m is the number of translations of letters and n is the number of word pairs. Each of the next m lines contains two distinct space-separated letters a and b, indicating that the letter a can be translated to the letter b. Each ordered pair of letters (a, b) appears at most once. Following this are n lines, each containing a word pair to check. Translations and words use only lowercase letters 'a'–'z', and each word contains at least 1 and at most 50 letters.

Output

For each pair of words, display *yes* if the two words match, and *no* otherwise.

Sample input	Sample output
3 3	yes
a c	no
b a	yes
a b	
aaa abc	
abc aaa	
acm bcm	