

Word Break

Time limit : 1s
Memory limit: 100MB

Given a string s and a dictionary of strings $wordDict$, return *true* if s can be segmented into a space-separated sequence of one or more dictionary words.

Note that the same word in the dictionary may be reused multiple times in the segmentation.

Input

The very first line of the input contains a string s ($1 \leq s.length \leq 1000$).

The second line is an integer n ($1 \leq n \leq 1000$) representing the number of words in $wordDict$. The next n lines contain a string each, which is an element of $wordDict$ ($1 \leq wordDict[i].length \leq 20$).

Output

true if s can be segmented into a space-separated sequence of one or more dictionary words.
false, otherwise.

Sample Input	Sample Output
applepenapple 2 apple pen	true
catsandog 5 cats dog sand and cat	false

Note: s and $wordDict[i]$ consist of only lowercase English letters.