/\*package whatever //do not write package name here \*/

import java.util.\*;

import java.lang.\*;

import java.io.\*;

class Trie

{

boolean isEnd;

HashMap<Character, Trie> h;

Trie()

{

isEnd = false;

h = new HashMap<Character, Trie>();

}

Trie createNode()

{

return new Trie();

}

//Trie insertion

void insert(String s, Trie root)

{

for(int i=0; i<s.length();i++)

{

if(!root.h.containsKey(s.charAt(i))) // if given node does not contain key

root.h.put(s.charAt(i), createNode());

root = root.h.get(s.charAt(i));

}

root.isEnd = true;

}

//Trie Search

Boolean search(String s, Trie root)

{

for(int i=0 ; i<s.length();i++)

{

if(root== null || !root.h.containsKey(s.charAt(i)))

return false;

root = root.h.get(s.charAt(i));

}

return root.isEnd;

}

}

class GFG {

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

int t = sc.nextInt();

int w = sc.nextInt();

int s = sc.nextInt();

for( int i= 0 ;i<t; i++)

{

Trie root = new Trie();

sc.nextLine();

String [] token = sc.nextLine().split(" ");

for(int j=0;j<w;j++)

{

root.insert(token[j], root);

}

while(sc.hasNext())

{

String tok = sc.nextLine();

if(root.search(tok,root)==true)

{

System.out.println(1);

}

else

{

System.out.println(0);

}

}

}

}

}