



Number of Groups

locked

 by [xrange](#)

Problem

Submissions

Leaderboard

Discussions

Editorial

Xrange and Khatki are playing with friendship graph today where each person is donated by a node with a node-id which is unique throughout the network. If two people A and B are friends then there will be an edge between A and B in friendship graph. Friendship is transitive i.e if A and B are friends and B and C are friends then A and C are also friends. Though in graph we will have edge between A and B , B and C only.

Now, as we are living in a cruel world, so sometimes friendships are broken. When someone breaks friendship with all the direct friends then friendships that happened due to transitive relation also breaks.

For example if A and B are friends, B and C are friends, C and D are friends and if C breaks friendship then friendship graph will be broken into two groups $\{A, B\}$ and $\{D\}$.

Given node-ids of K persons, who are breaking their friendship, tell Xrange and Khatki how many groups of friends are formed after breaking the friendships.

Input Format

First line of input contains two space separated integers N and M which represent number of persons and number of friendship relations respectively. Each of the next M lines contains two space separated integers P and Q which represent the friendship between P and Q .

Next line contains a single integer K . Each of the next K lines contains single integer ID which represent the node-id of a person.

Output Format

Print the total number of groups formed after Q queries.

Constraints:

$$1 \leq N \leq 10^5$$

$$1 \leq M \leq 10^6$$

$1 \leq K \leq 10^5$
 $0 \leq P, Q, ID < 10^5$

Sample Input

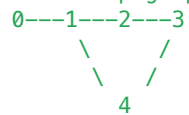
```
5 5
0 1
1 2
2 3
3 4
4 1
2
0
1
```

Sample Output

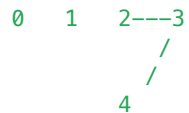
```
3
```

Explanation

Friendship graph will look like given below:



After 1 and 2 break friendship with all other friends new graph will be look like given below:



in  

Submissions: 41


Max Score: 80

Difficulty: Difficult

Rate This Challenge:

☆☆☆☆☆

[More](#)

Current Buffer (saved locally, editable)  

Java 7



```
1 import java.io.*;
2 import java.util.*;
3 import java.text.*;
4 import java.math.*;
5 import java.util.regex.*;
6
7 public class Solution {
8
9     public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
```

Line: 1 Col: 1



[Upload Code as File](#)



Test against custom input

Run Code

Submit Code

Join us on IRC at [#hackerrank](#) on freenode for hugs or bugs.

[Contest Calendar](#) | [Blog](#) | [Scoring](#) | [Environment](#) | [FAQ](#) | [About Us](#) | [Support](#) | [Careers](#) | [Terms Of Service](#) | [Privacy Policy](#) | [Request a Feature](#)