Hello, **2024101067**.

Cheating

Submit solution

All submissions
Best submissions

Points: 100 (partial)
Time limit: 1.0s
Memory limit: 256M

Allowed languages
C, C++

Problem Statement

There is a group of friends consisting of n students. They were given a DSA assignment. The students are numbered as $0, 1, 2....., n-1$.

After they submitted the assignment, a plagiarism graph was generated by the TAs. An edge between student a and student b indicates that student a got plagiarised with student b. Now, lesser the shortest distance between two students a and b, more likely they have copied.

Neeraj (student 0) was sad as he got plagiarised (And now he was going to get a 0). He made q queries k_1, k_2, ... , k_q. For each query k_i he wanted to find the number of students who were at a *shortest distance* of k_i from him. Help him do it.

Input Format

The first line contains two integers n and m, representing number of nodes and number of edges respectively.

Each of the next m lines contains two integers u and v, indicating an edge between u and v.

The next line contains q, number of queries.

Each of next q lines contains one integer k, representing the query shortest distance.

Output Format

Print q integers, output of each of query (The number of students at a shortest distance k_i from student 0)

Constraints

$1 \leq n \leq 100,000$

$1 \leq q \leq 100,000$

$0 \leq u, v < n$

$0 \leq k_i \leq 100,000$

NOTE: ASSUME THE GRAPH IS UNDIRECTED. ALSO THE GRAPH MAY OR MAY NOT BE CONNECTED. IN CASE THERE ARE NO NODES AT A SHORTEST DISTANCE k_i, OUTPUT 0

Sample Test Case 0:

Input:

Copy

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

Output:

Copy

```
1
3
0
```

Clarifications

Request clarification

No clarifications have been made at this time.