

Far Away

Input file: *standard input*
Output file: *standard output*
Time limit: 3 seconds
Memory limit: 1024 mebibytes

There is an undirected graph with n vertices and m edges. The graph does not contain self-loops or parallel edges and is not necessarily connected. The vertices are numbered from 1 to n .

There are q queries. Each query is a pair (x, y) . You need to determine whether the distance between x and y is strictly more than 20 000 or not.

The distance between two vertices is the number of edges on a shortest path between them. If there is no shortest path, the distance is considered to be $+\infty > 20\,000$.

Input

The first line contains three integers n , m , and q ($1 \leq n \leq 10^5$, $0 \leq m \leq 3 \cdot 10^5$, $1 \leq q \leq 3 \cdot 10^5$).

Then follow m lines, each containing two integers u_i and v_i , representing the edges ($1 \leq u_i < v_i \leq n$, no two edges coincide).

After that follow q lines, each containing two integers x_i and y_i ($1 \leq x_i, y_i \leq n$, x_i and y_i may coincide).

Output

Print q lines, each with either “YES” or “NO”: the answers to the queries.

Example

<i>standard input</i>	<i>standard output</i>
10 5 10	NO
1 2	NO
1 7	YES
3 10	YES
4 10	YES
5 6	NO
3 3	NO
5 6	YES
5 2	YES
10 6	YES
9 4	
6 6	
1 7	
10 1	
10 5	
8 7	

Note

In the example, there are just 10 vertices in the graph, so we are checking whether the vertices are in different connected components or not.