

E. Case of Computer Network

time limit per test: 3 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Andrewid the Android is a galaxy-known detective. Now he is preparing a defense against a possible attack by hackers on a major computer network.

In this network are n vertices, some pairs of vertices are connected by m undirected channels. It is planned to transfer q important messages via this network, the i -th of which must be sent from vertex s_i to vertex d_i via one or more channels, perhaps through some intermediate vertices.

To protect against attacks a special algorithm was developed. Unfortunately it can be applied only to the network containing directed channels. Therefore, as new channels can't be created, it was decided for each of the existing undirected channels to enable them to transmit data only in one of the two directions.

Your task is to determine whether it is possible so to choose the direction for each channel so that each of the q messages could be successfully transmitted.

Input

The first line contains three integers n , m and q ($1 \leq n, m, q \leq 2 \cdot 10^5$) — the number of nodes, channels and important messages.

Next m lines contain two integers each, v_i and u_i ($1 \leq v_i, u_i \leq n$, $v_i \neq u_i$), that means that between nodes v_i and u_i is a channel. Between a pair of nodes can exist more than one channel.

Next q lines contain two integers s_i and d_i ($1 \leq s_i, d_i \leq n$, $s_i \neq d_i$) — the numbers of the nodes of the source and destination of the corresponding message.

It is not guaranteed that in it initially possible to transmit all the messages.

Output

If a solution exists, print on a single line "Yes" (without the quotes). Otherwise, print "No" (without the quotes).

Examples

input
4 4 2 1 2 1 3 2 3 3 4 1 3 4 2
output
Yes

input
3 2 2 1 2 3 2 1 3 2 1
output
No

input
3 3 2 1 2 1 2 3 2 1 3 2 1
output
Yes

Note

In the first sample test you can assign directions, for example, as follows: $1 \rightarrow 2$, $1 \rightarrow 3$, $3 \rightarrow 2$, $4 \rightarrow 3$. Then the path for the first message will be $1 \rightarrow 3$, and for the second one — $4 \rightarrow 3 \rightarrow 2$.

In the third sample test you can assign directions, for example, as follows: $1 \rightarrow 2$, $2 \rightarrow 1$, $2 \rightarrow 3$. Then the path for the first message will be $1 \rightarrow 2 \rightarrow 3$, and for the second one — $2 \rightarrow 1$.