Problem A. Chiaki Chain

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Chiaki has a graph consisting of n vertices and m edges. Each edge connects two vertices. After a short time of research, she has realized that the graph may represent a special graph — the k-th order Chiaki Chain.

An ordinary chain is a graph consisting of sequential (at least two) vertices. Every two adjacent vertices are connected by an edge. The k-th order Chiaki Chain looks slightly different from a chain. There are k sub-chains extended from k different vertices on the main chain. At the other side of each sub-chain, there is a simple cycle of length $3, 4, \ldots, k+2$ respectively. There is no useless vertices or edges on the k-th order Chiaki Chain.

Chiaki would like to know whether the graph represents the k-th order Chiaki Chain or not.

Input

There are multiple test cases. The first line of the input contains an integer T, indicating the number of test cases. For each test case:

The first line contains three integers n, m and k ($1 \leq n, m, k \leq 2 \times 10^5$) — the number of vertices and the number of edges in the graph and the order of Chiaki Chain.

Then followed by m lines. The i-th line contains two integers x_i and y_i ($1 \leq x_i, y_i \leq n$) representing the vertices the i-th edge connects.

It is guaranteed that the sum of m in all test cases will not exceed 2×10^5.

Output

For each test case, output "Yes" if the graph represents the k-th order Chiaki Chain, or "No" otherwise.

Example

standard input	standard output
2 20 22 3 1 2 2 3 3 4 4 5 5 6 2 7 7 8 8 9 9 10 10 11 11 12 12 8 3 13 13 14 14 15 15 16 16 13 5 17 17 18 18 19 19 20 20 18 5 6 3 1 2 2 3 3 4 4 5 5 1 1 3	Yes No

Note

The following image corresponds to the first sample case.