Problem E. Equal Measure

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

A friend bought a piece of fabric, green with white squares. "Ah, it looks like a chessboard!" "To me, it looks more like manuscript paper." "It really reminds me of mung bean cakes." The same fabric, yet each of us viewed it differently. Everyone's perspective on beauty varies, while there's no harm in people having different views. What truly matters is to tolerate and respect one another's perspectives.

If one can enjoy the beauty of a sunrise through the door, why insist they walk to the window to listen to the birds sing? You enjoy your birdsong, they admire their sunrise, and both will experience beauty in equal measure.

You decide to leave for a botanical garden and take a trip to enjoy the birdsong. There are n areas and m trails in the botanical garden, and the i-th trail connecting the u_i-th and the v_i-th area.

A route in the botanical garden is defined as a sequence of areas $a_1, a_2, \ldots, a_k$ with length k, which satisfies the following conditions:

- $k \geq 3$.
- $\forall i \neq j$, $a_i \neq a_j$.
- $\forall 1 \leq i < k$, there is a trail connecting the a_i-th and the a_{i+1}-th area.
- There is a trail connecting the a_k-th and the a_1-th area.

To ensure that every visitor experiences beauty in equal measure, you decided to write a program to check whether all routes in the botanical garden have the same length. If no route exists in the botanical garden, we consider all routes to be the same length.

Input

The first line contains an integer T ($1 \leq T \leq 5 \times 10^5$), representing the number of test cases.

In each test case, the first line contains two integers n, m ($1 \leq n \leq 5 \times 10^5$, $0 \leq m \leq 5 \times 10^5$), representing the number of areas and trails respectively. It is guaranteed that among all T test cases, $\sum n,\ \sum m \leq 5 \times 10^5$.

m lines follow. The i-th line of them contains two integers u_i, v_i ($1 \leq u_i, v_i \leq n$, $u_i \neq v_i$), indicating the i-th trail connects the u_i-th and the v_i-th area. There is at most one trail connecting the same pair of areas. From any area, it is possible to reach any other area through the trails.

Output

For each testcase, output `Yes` if all routes have the same length, or `No` otherwise.

Examples

standard input	standard output
1 5 6 1 2 2 3 3 1 1 4 4 5 5 1	Yes
2 2 1 1 2 5 6 1 2 2 3 3 1 2 4 3 5 4 5	Yes No
2 4 5 1 2 2 3 3 1 2 4 4 1 5 6 1 2 2 3 1 4 1 5 4 3 5 3	No Yes