# Problem M
# Predisposed

You are given two integers $N$ and $M$. You are also given $Q$ constraints in the form $(X_j, Y_j)$.

A sequence $A = (A_1, \ldots, A_N)$ of length $N$ is *predisposed* if and only if:

- For each $1 \leq i \leq N$, it holds that $0 \leq A_i < M$.
- For each $1 \leq j \leq Q$, the sum of all $A_k$ where $k$ is a multiple of $X_j$ is equal to $Y_j$ under modulo $M$. Formally, $\sum_{X_j | k} A_k \equiv Y_j \pmod{M}$.

Find the number of all possible predisposed sequences. As the answer can be quite large, compute it modulo $998\,244\,353$.

### Input

The first line contains three integers $N$, $M$, and $Q$ ($1 \leq N, M < 998\,244\,353$; $1 \leq Q \leq \min(N, 100\,000)$). Each of the next $Q$ lines contains two integers $X_j$ and $Y_j$ ($1 \leq X_j \leq N$; $0 \leq Y_j < M$; $X_p \neq X_q$ for $p \neq q$) representing a constraint.

### Output

Output an integer in a single line representing the number of predisposed sequences modulo $998\,244\,353$.

| Sample Input 1 | Sample Output 1 |
|---|---|
| 2 3 2<br>1 0<br>2 1 | 1 |

*Explanation of Sample 1:* The only predisposed sequence is $A = (2, 1)$.

| Sample Input 2 | Sample Output 2 |
|---|---|
| 100000 100000 1<br>100000 0 | 373304036 |

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