# Be Careful 2

| | |
|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 12 seconds |
| Memory limit: | 1024 megabytes |

Little Cyan Fish has an $n \times m$ rectangle located in a plane. The top-right corner of the rectangle is at $(n, m)$, while the bottom-left corner is at $(0, 0)$. There are $k$ banned points inside the rectangle. The $i$-th banned point is located at $(x_i, y_i)$.

Little Cyan Fish would like to draw a square inside the rectangle. However, he dislikes all the banned points, so there cannot be any banned points inside his square. Formally, Little Cyan Fish can draw a square with the bottom-left corner at $(x, y)$ and a side length $d$ if and only if:

- Both $x$ and $y$ are non-negative integers while $d$ is a positive integer.
- $0 \le x < x + d \le n$.
- $0 \le y < y + d \le m$.
- For each $1 \le i \le k$, the following condition must **NOT** be met:
  - $x < x_i < x + d$ and $y < y_i < y + d$.

Please calculate the sum of the areas of all the squares that Little Cyan Fish can possibly draw. Since the answer could be huge, you need to output it modulo 998244353.

## Input

The is only one test case in each test file.

The first line of the input contains three integers $n$, $m$ and $k$ ($2 \le n, m \le 10^9$, $1 \le k \le 5 \times 10^3$) indicating the size of the rectangle and the number of banned points.

For the following $k$ lines, the $i$-th line contains two integers $x_i$ and $y_i$ ($0 < x_i < n$, $0 < y_i < m$) indicating the position of the $i$-th banned point. It is guaranteed that all the banned points are distinct.

## Output

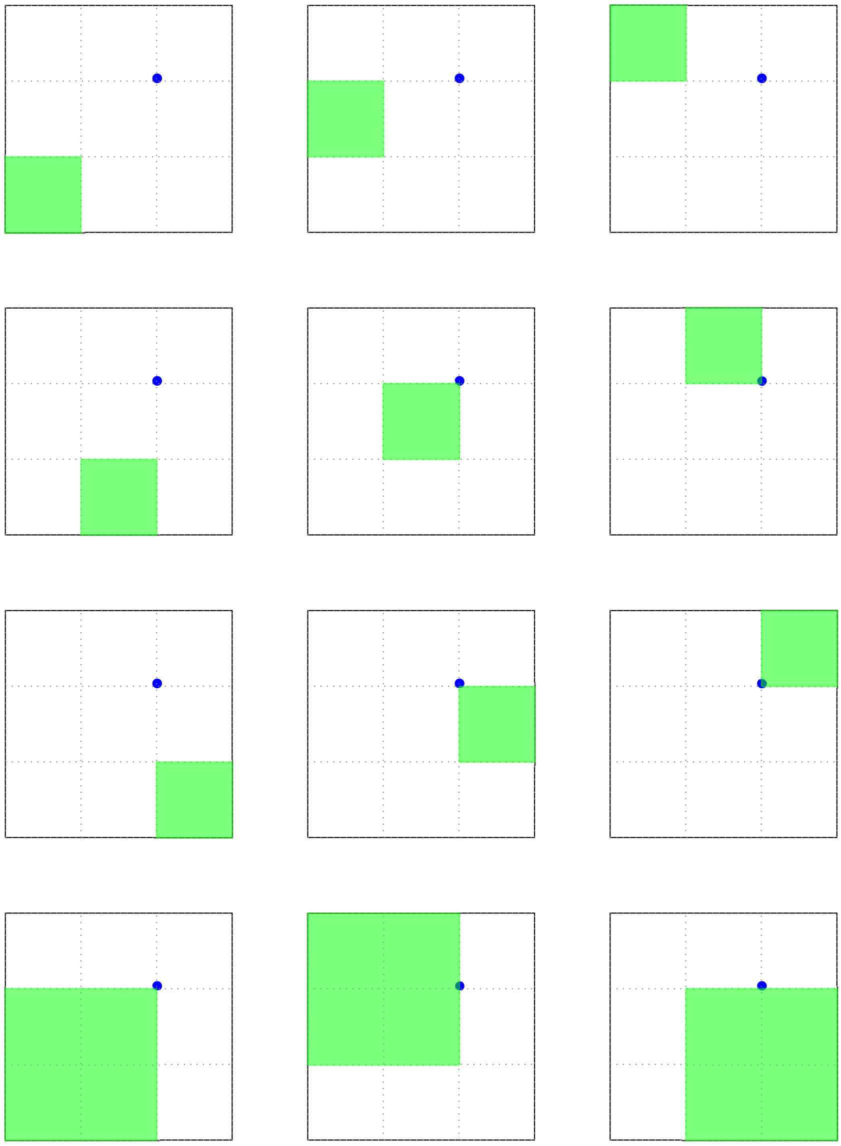
Output one line containing one integer indicating the answer modulo 998244353.

## Examples

| standard input | standard output |
|---|---|
| `3 3 1`<br>`2 2` | `21` |
| `5 5 2`<br>`2 1`<br>`2 4` | `126` |

## Note

For the first sample test case, Little Cyan Fish has 12 ways to draw a square, illustrated as follows.



There are 9 squares of side length 1 and 3 squares of side length 2. So the answer is $9 \times 1^2 + 3 \times 2^2 = 21$.

Note that the following plans are invalid since there's a banned point in the square.