Trails

Input file: `standard input`
Output file: `standard output`
Time limit: 3 seconds
Memory limit: 1024 megabytes

BaoBao is taking a walk on an infinite two-dimensional plane. For each point (x, y) on the plane where both x and y are integers, there is a bi-directional trail connecting points (x, y) and $(x + 1, y)$, and another bi-directional trail connecting points (x, y) and $(x, y + 1)$. What's more, there are n additional bi-directional trails, where the i-th trail connects points (x_i, y_i) and $(x_i + 1, y_i + 1)$.

BaoBao can only move along the trails. Let $f(x, y)$ be the smallest number of trails BaoBao has to pass if he wants to move from point $(0, 0)$ to point (x, y). Given two integers p and q, calculate

$$\sum_{x=0}^{p} \sum_{y=0}^{q} f(x, y)$$

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, p, and q ($1 \le n \le 10^6$, $0 \le p, q \le 10^6$). Their meanings are described above.

For the following n lines, the i-th line contains two integers x_i and y_i ($0 \le x_i, y_i \le 10^6$) indicating that the i-th additional trail connects points (x_i, y_i) and $(x_i + 1, y_i + 1)$. It's guaranteed that $x_i \ne x_j$ or $y_i \ne y_j$ for all $i \ne j$.

It's guaranteed that the sum of n of all test cases does not exceed 10^6. Note that there is no constraint on the sum of p or q.

Output

For each test case output one line containing one integer indicating the answer.

Example

standard input	standard output
2 3 2 4 1 1 0 2 0 0 1 100 100 1000 1000	34 1020100