Problem C. Territories

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	512 mebibytes

This time Byteasar researches a wildlife in a nature reserve that has a shape of an $X \times Y$ rectangle. It is divided into XY unit squares, there is a square with coordinates (x, y) for every $1 \le x \le X$ and $1 \le y \le Y$.

Our hard-working researcher distinguished n species of animals and discovered that each species **dislikes** living on some particular rectangle (which is stricly smaller than whole nature reserve). For species number i it is rectangle described by its two opposite corners (x_i, y_i) and (x'_i, y'_i), for some $x_i \le x'_i$ and $y_i \le y'_i$. We know that there are c_i animals in that species. Therefore, there are $S = c_1 + c_2 + \ldots + c_n$ animals in total.

Byteasar has an idea for a social-natural experiment which relies on putting each of S animals in some cell outside of its disliked region. *Sociality* of a placement is a number of pairs of animals so that both of them are in the same cell. Hence, if a cell contains p animals, this adds $\frac{p(p-1)}{2}$ to the overall sociality.

It is allowed to put animals from the same species into different cells.

Find the maximum value of the sociality that can be attained.

Input

The first line of input contains three integers n, X and Y ($1 \le n \le 100\,000$, $1 \le X, Y \le 1000$) denoting the number of species and dimensions of nature reserve, respectively.

Each of following n lines contains a description of species, i-th of them contains five integers $x_i, y_i, x'_i, y'_i, c_i$ ($1 \le x_i \le x'_i \le X$, $1 \le y_i \le y'_i \le Y$, $1 \le c_i \le 1000$) describing region disliked by species number i and number of animals in that species. For each i at least one of the following conditions holds: $x_i \ne 1$, $y_i \ne 1$, $x'_i \ne X$, $y'_i \ne Y$

Output

You need to print one integer – the maximum possible sociality of some placement.

Examples

standard input	standard output
2 1 2 1 1 1 1 3 1 2 1 2 4	9
3 7 3 1 1 3 3 1 5 1 7 3 1 3 2 5 3 1	3

Explanation to the sample test: In first sample we need to put four animals in a cell $(1, 1)$ (contributing $\frac{4 \cdot 3}{2} = 6$ to the sociality) and put three remaining animals in a cell $(1, 2)$ (contributing $\frac{3 \cdot 2}{2} = 3$ to the sociality).

Second sample test is depicted below. All animals can be put in a cell $(4, 1)$.