Problem H. Walk

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	1024 megabytes

On the 2-D plane, you are initially located at $(0, 0)$ and you want to go to (N, M). If your current position is (x, y), you can go to $(x + 1, y)$ or $(x, y + 1)$ in the next step. The path you walk is defined as the $(0, 0)$ to (N, M) polyline formed by connecting the positions of each step in turn.

There are K rectangles. The lower-left corner and upper-right corner of the i-th rectangle are $(x_{i,1} - 0.5, y_{i,1} - 0.5)$ and $(x_{i,2} + 0.5, y_{i,2} + 0.5)$, respectively. If the path you walk intersects both the left and right boundaries of the rectangle, you have to bear a cost of a_i, and if it intersects both the top and bottom boundaries of the rectangle, you have to bear a cost of b_i. The total cost is defined as the sum of the costs generated by each rectangle.

You need to find the minimum total cost required to travel from $(0, 0)$ to (N, M).

Input

The first line contains three integers N, M, and K ($1 \le N, M \le 50, 1 \le K \le 2000$).

The following K lines contain six integers each. The i-th line contains six integers $x_{i,1}, y_{i,1}, x_{i,2}, y_{i,2}, a_i, b_i$, describing the position and costs of the i-th rectangle. It is guaranteed that $0 \le x_{i,1} \le x_{i,2} \le N$, $0 \le y_{i,1} \le y_{i,2} \le M$, and $0 \le a_i, b_i \le 10^4$.

Output

Output a single integer denoting the minimum total cost required to travel from $(0, 0)$ to (N, M).

Examples

standard input	standard output
1 2 1 0 1 1 1 1 2	2
4 2 6 0 1 2 1 3 3 0 1 4 1 2 9 1 0 1 2 4 6 3 0 3 2 6 2 2 0 3 2 5 1 1 0 2 1 6 0	27