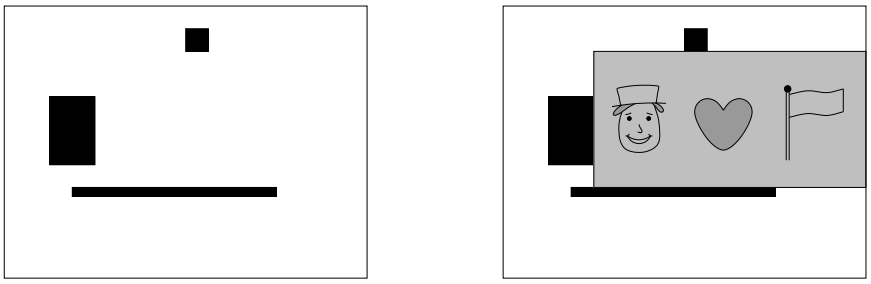
Election

Input File: *elecin.txt*
Output File: *elecout.txt*

Time Limit: 1 second

Election time is coming around, and you are lagging in the polls. Your highly-paid advisors have told you that the surest way to be re-elected is to hang an incredibly large picture of your face outside the front of the town hall — the larger the picture, the greater the votes!

You step outside and survey the front wall of the building. The wall forms a giant rectangle, containing several small rectangular windows. You cannot block anybody's view (this would surely cause a scandal), so your task is to find a rectangle on this wall with the largest possible area that does not cover any part of a window.

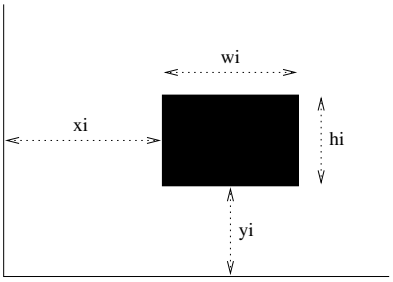


As an example, consider the wall illustrated above. The diagram on the left shows three windows on the wall, shaded in black. The diagram on the right shows the rectangle of largest area that you can use, shaded in grey.

Input

The first line of input will contain the integers w and h separated by a single space, where w is the width of the wall and h is the height of the wall ($1 \leq w, h \leq 40\,000$). The second line of input will contain the single integer n, describing the number of windows in this wall ($0 \leq n \leq 100$).

Following this will be n lines, each describing a single window. The ith of these lines will be of the form $x_i\ y_i\ w_i\ h_i$, where x_i is the distance of the window from the leftmost edge of the wall, y_i is the distance of the window from the bottom edge of the wall, w_i is the width of the window, and h_i is the height of the window. These distances are illustrated below.



For each window, the four integers $x_i\ y_i\ w_i\ h_i$ will be separated by single spaces. It is guaranteed that $1 \leq x_i < x_i + w_i \leq w$ and $1 \leq y_i < y_i + h_i \leq h$. No two windows will overlap, although windows may touch at a corner or along an edge.

All distances are measured in centimetres.

Output

Your output must consist of a single line containing a single integer, giving the area of the largest possible rectangle on the wall that does not cover any part of a window. This area should be given in square centimetres.

Sample Input

```
800 600
3
100 250 100 150
150 180 450 20
400 500 50 50
```

Sample Output

```
180000
```

Explanation

The sample data above describes the example that was illustrated earlier. The rectangle of largest area that does not cover any part of a window has width 600 and height 300, and so the final area is $600 \times 300 = 180\,000$.

Scoring

The score for each input file will be 100% if the correct answer is written to the output file and 0% otherwise.