# 12830   A Football Stadium

Once upon a time, Sand King used to rule the sand country. In the sand country, there was sand everywhere, but there were a very few sources of oxygen. In the sand country, trees were worshipped, as without them sand people would not live. But the Sand King was very much fond of football. So he ordered to make a very BIG football stadium (rectangular in shape) in his kingdom. The news was very alarming to all the citizens of the sand kingdom. As cutting the very few trees would cause death to the living creatures. So they requested the king to not make the football stadium.

The king was so stubborn in his idea that he would not give up making a football stadium. But he was also sympathetic to his citizens. So he has hired you to help him out.

You are given the width and height of the sand kingdom. Fortunately, sand king wants the football stadium to be parallel to the borders of the sand kingdom (he does not like bad orientation of the football stadium). You are also given the positions of the valuable trees. Your task is to maximize the area of the football stadium so that no trees are harmed. You can consider the trees as points. The trees may stand at the boundary of the football stadium, but cannot be strictly inside it. Note that the Kingdom is a rectangle with axis parallel sides and the lower left point of the kingdom is $(0,0)$ and upper right point is (L,W).
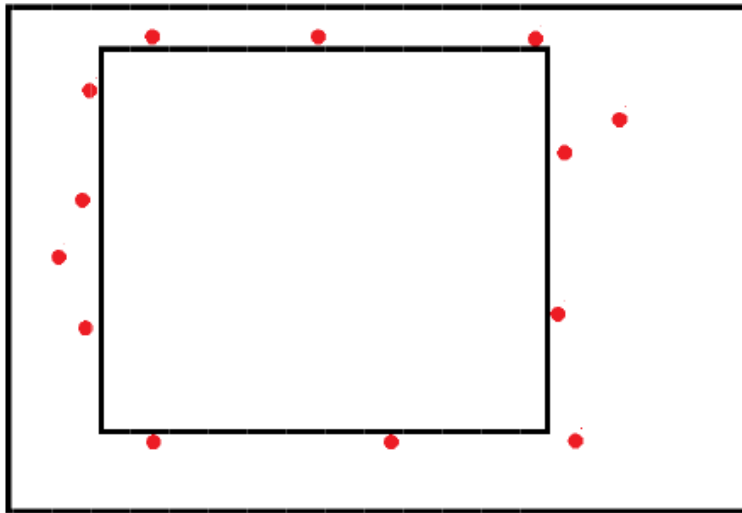
Input

The first line of the input contains a number T $(1 \le T \le 100)$, denoting the total number of test cases. Next, T test cases follow. Each test case begins with two numbers, L and W $(1 \le L, W \le 10000)$, denoting the length and width of the sand kingdom respectively. Then a number N $(1 \le N \le 200)$. Followed by, there are N integer co-ordinates of trees, x_i, y_i, where $(0 \le x_i \le L, 0 \le y_i \le W)$.

Output

For each input set, first print the case number, followed by the maximum possible area of the football stadium. See the sample input/output for more details.

Sample Input

```
3
4 8
3
1 2
3 4
3 7
12 10
2
3 6
8 9
5 5
2
0 0
5 5
```

Sample Output

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Case 1: 18
Case 2: 81
Case 3: 25
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