

Problem D: Largest Square

There is an $N \times N$ mosaic of square solar cells ($1 \leq N \leq 2,000$). Each solar cell is either good or bad. There are W ($1 \leq W \leq 50,000$) bad cells. You need to find the largest square within the mosaic containing at most L ($0 \leq L \leq W$) bad cells.

Input Specification

The input will begin with a number $Z \leq 20$, the number of test cases, on a line by itself. Z test cases then follow. The first line of the test case contains three space-separated integers: N , W , and L . W lines follow, each containing two space-separated integers representing the coordinates of a location of the bad solar cells.

Sample Input

```
1
4 3 1
1 1
2 2
2 3
```

Output Specification

For each input instance, the output will be a single integer representing the area of the largest square that contains no more than L bad solar cells.

Output for Sample Input

```
4
```

Explanation of Sample Output

The mosaic is 4×4 , and contains the following arrangement of good and bad cells ('G' represents good, and 'B' represents bad):

```
BGGG
GBBG
GGGG
GGGG
```

Several 2×2 squares at the bottom contain no bad solar cells, but all 3×3 squares contain at least two bad solar cells.

Neal Wu