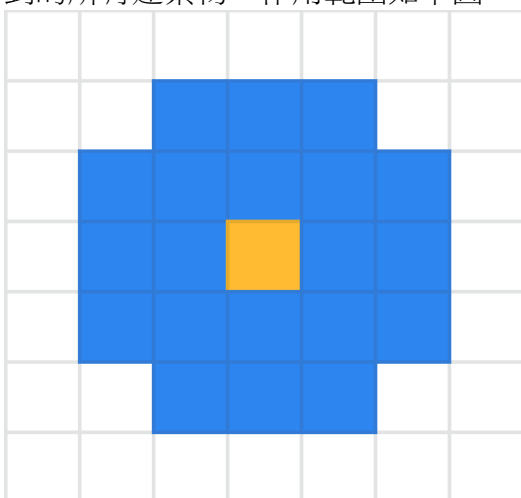


## 問題 3 – 閃電閃電 (Lightning Spell)

(15 分)

### 問題敘述

部落衝突是一款真正的戰爭遊戲。這個遊戲的目標是摧毀對手的所有建築物。今天小 D 和小 N 在討論如何施放閃電法術。為了想請你幫忙一起擬定策略，他們決定把遊戲的規則也告訴你。這個遊戲中一個部落是在一個  $N \times N$  的方格領土上，可以設置  $M$  個不重疊的建築物，每個建築物都會佔據  $3 \times 3$  的正方形。在進攻時可以使用法術摧毀建築物，今天小 D 和小 N 想使用閃電法術。閃電法術的作用是摧毀一個去掉四個角落的  $5 \times 5$  正方內覆蓋到的所有建築物。作用範圍如下圖：



施放法術時，一個建築只要和法術範圍有重疊，就會被摧毀。今天貪心的小 D 和小 N 想要問你，在這個有  $M$  個建築物的部落，施放一次閃電法術最多可以摧毀幾個建築物。

（建築物和法術中心不能超出地圖，但法術範圍「可以」超出地圖）

### 輸入格式

第一行有兩個正整數  $N, M$  分別代表地圖寬度，和建築物數量

接下來  $M$  行，每行有兩個整  $X_i, Y_i$  代表第  $i$  個建築物的中心

保證建築物不會超出地圖，也不會彼此重疊。

### 輸出格式

輸出一個正整數代表最多可以摧毀多少建築物。

### 資料範圍

- $1 \leq N \leq 10000$
- $1 \leq M \leq 1000$
- $1 \leq X_i, Y_i \leq N$

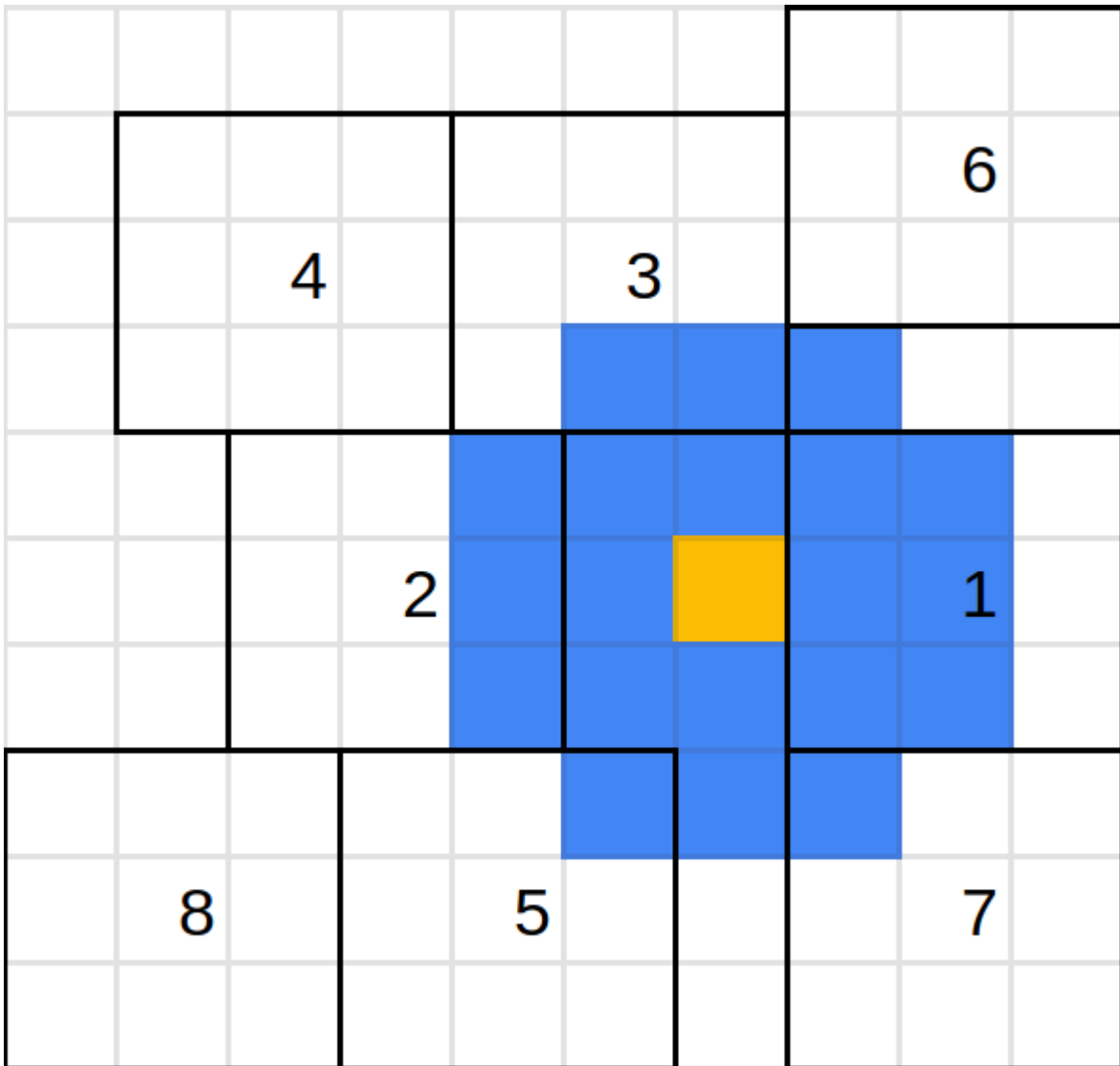
### 輸入範例 1

10	8
6	9
6	4
3	6
3	3
9	5
2	9
9	9
9	2

### 輸出範例 1

5

## 範例說明



## 輸入範例 2

10 3

8 3

5 2

4 6

## 輸出範例 2

3

## 輸入範例 3

10 4

6 8

5 4

3 7

2 4

## 輸出範例 3

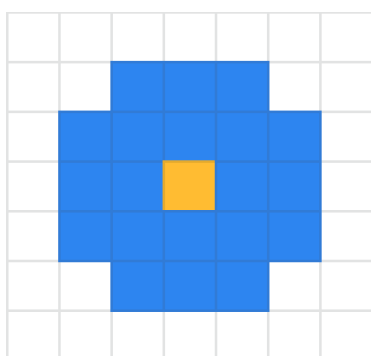
4

## Q3: Lightning Spell

(15 points)

### Description

Clash of Clans is a real war game. The goal of this game is to destroy all the opponent's buildings. Today, Mr. D and Mr. N are discussing what the optimal strategy to cast the lightning spell is. In order for you to join the discussion, they decided to explain the rules of the game to you. In the game, every clan owns a  $N \times N$  village, in which they build  $M$  non-overlapping buildings in their village. Each building occupies a  $3 \times 3$  square. The attacker can cast spells to destroy the buildings. The spell they brew today is the lightning spell. A lightning spell will destroy all the buildings in the area of a  $5 \times 5$  square with the corners removed (as the following image shows: the orange square is where the lightning spell is cast, and the blue + orange squares are where the lightning spell can hit buildings)



When a lightning spell is cast, any buildings covered by the area will be destroyed. The greedy Mr. D and Mr. N want you to calculate how many buildings they can destroy with a single lightning spell.

(The buildings and the center of the cast spell can't be outside of the village, but the affected area of the lightning spell can lie beyond the boundary)

### Input Format

The first line contains two integers  $N$  and  $M$  — the width of the village and the number of villages.

Next  $M$  lines contain buildings — one per line.

Each building contains two integers  $X$  and  $Y$  — the location of the building.

It's guaranteed that the buildings do not exceed the boundary and do not overlap each other.

### Output Format

Print an integer — the most buildings you can destroy with a lightning spell

### Data Range

- $1 \leq N \leq 10000$

- $1 \leq M \leq 1000$
- $1 \leq X_i, Y_i \leq N$

### Input Example 1

```

10 8
6 9
6 4
3 6
3 3
9 5
2 9
9 9
9 2

```

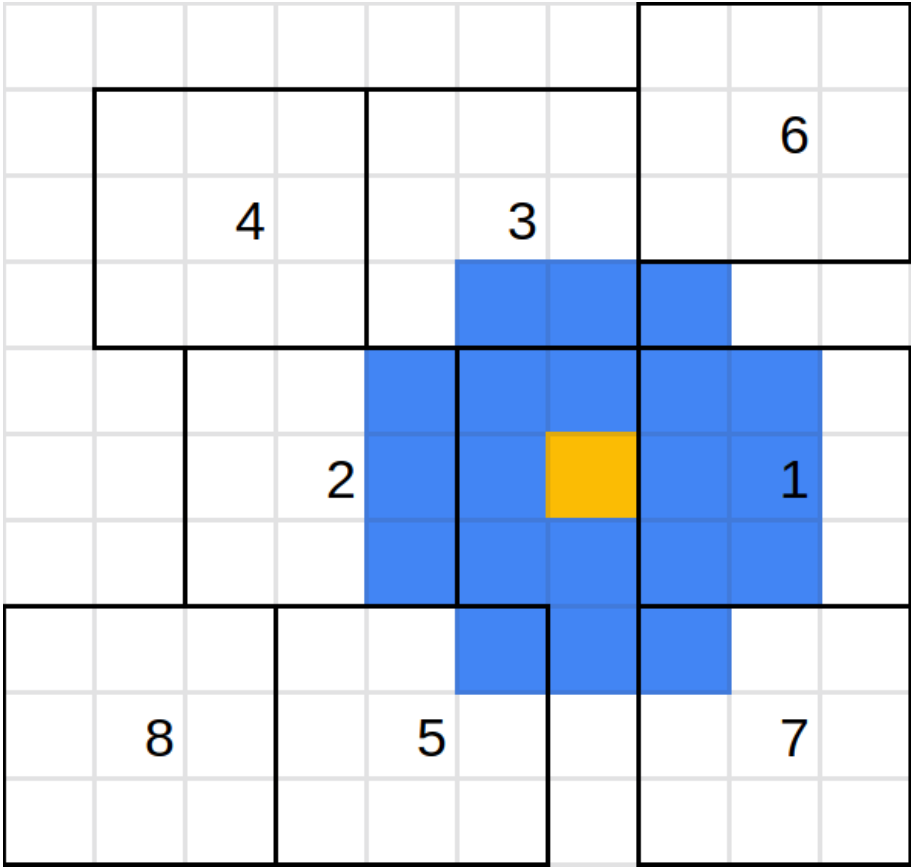
### Output Example 1

```

5

```

### Example Explanation:



### Input Example 2

```
10 3
8 3
5 2
4 6
```

### Output Example 2

```
3
```

### Input Example 3

```
10 4
6 8
5 4
3 7
2 4
```

### Output Example 3

```
4
```