



[CF651C]Watchmen

☰ Algorithm	离散化
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题目链接:

Problem - C - Codeforces

Watchmen are in a danger and Doctor Manhattan together with his friend Daniel Dreiberg should warn them as soon as possible. There are n watchmen on a plane, the i -th

🌟 <https://codeforces.com/contest/651/problem/C>



<https://codeforces.ml/contest/651/problem/C> (镜像站)

Watchmen

给出 n 对坐标 (x_i, y_i) 。求问曼哈顿距离和欧氏距离相等的坐标组 (i, j) ($1 \leq i < j \leq n$) 有多少对? $1 \leq n \leq 2 \times 10^5, |x_i|, |y_i| \leq 10^9$ 。Watchmen are in a danger and Doctor Manhattan together with his friend Daniel Dreiberg should warn them as soon as possible. There are n

<https://www.luogu.com.cn/problem/CF650A>

题解：

此题中，医生眼中两点的距离是两点的曼哈顿距离（正如他的名字），而普通人眼中两点的距离是两点的直线距离。设 $x_i(a, b), x_j(c, d), A(c, b)$ ，因为三角形两边之和大于第三边，所以 x_i, x_j, A 三点共线，因此， x_i, x_j 共线。可以用map离散化，在一条一条横（竖）线上加加减减。

附上AC代码（别看 $n \leq 200000$ 有点可怕）太简单，忘写注释了。

```
//
// Created by admin on 2020/6/26.
//
#include <bits/stdc++.h>
#define int long long
using namespace std;
map<int,int> x,y;
map<pair<int,int>,int> z;
int n;
signed main()
{
    int a,b,res=0;
    cin>>n;
    for(int i=1;i<=n;i++)
    {
        cin>>a>>b;
        x[a]++;
        y[b]++;
        z[make_pair(a,b)]++;
    }
    for(auto it : x)
        res+=it.second*(it.second-1)/2;
    for(auto it : y)
        res+=it.second*(it.second-1)/2;
    for(auto it : z)
        res-=it.second*(it.second-1)/2;
    cout<<res<<endl;
}
```