Valorant

Time Limit: 5 Second
Memory Limit: 2048 MB

Aggrovector loves playing Valorant and he can even play it for 144 hours without sleeping! However, since he is not a professional player, he often ends up hurting his allies when trying to detonate a bomb at his enemy! As a computer science student, he wants to write a program to find out how he should set up and detonate the bomb so that it only kills his enemy. However, he is busy playing Valorant now, so he assigned you to write the program for him.

More formally, Aggrovector has n allies in the game, each of them can be represented as a circle on a 2D plane with current origin (x, y) and radius r. He also has m enemies, each is a single point with current location (x', y'). He wants to kill as many enemies as he wants while avoid hurting any of his enemies, by choosing the location of the bomb as well as the radius of effect. The radius needs to be a real number between 0 and R, where R is the maximum radius of effect the bomb can possibly have.

Input

The input begins with three integers n, m, and R ($1 \leq n \leq 10$, $1 \leq m \leq 2000$, $1 \leq R \leq 20000$), as described in the problem statement.

The next n lines will each contain 3 space-separated integers x, y, r ($-20000 \leq x, y \leq 20000$, $1 \leq r \leq 20000$), which represent the location (x, y) and radius (r) of Aggrovector's allies.

The next m lines will each contain 2 space-separated integers x', y' ($-20000 \leq x', y' \leq 20000$), which represent the location (x', y') of Aggrovector's enemies.

Output

Output a single integer representing the maximum number of enemy Aggrovector can kill with the bomb.

Sample Inputs

```
4 10 100
0 0 3
10 0 3
10 10 3
0 10 3
0 4
0 5
0 6
5 3
5 -3
5 5
6 7
3 6
10 4
8 4
```

Sample Outputs

```
5
```