MOSQUITO UNION

Mosquito Union (a.k.a MU) is one of the most iconic and successful footballoon clubs in the world, both domestically and internationally. Throughout its history, MU has been home to legendary players who have left an indelible mark on the sport. The club has achieved remarkable success, including numerous league titles and victories in prestigious competitions. MU's commitment to attacking, and entertaining footballoon and its enduring legacy make it a symbol of excellence in the world of sports.

However, that is the story of the past. MU now experiences all kinds of problems and cannot maintain its dominance as it used to. The team has been left far behind their rivals and even struggles to earn points from small teams. They sometimes even lose terribly against their rivals.

Do not accept this situation, Mr. Seven Ez, the coach, has been analyzing each match MU has attended in the past. He has found out that his players often stand in the wrong positions, and therefore cannot mark opponent players. Given that a player can mark at most one opponent player at a certain time, and that he cannot mark a player who is outside his cover range (for ease of calculation, the distance between the player at (x_1, y_1) and the player at (x_2, y_2) is $|x_1 - x_2| + |y_1 - y_2|$), Mr. Seven Ez wants you to calculate the maximum numbers of opponent players that his team can mark given a certain position of players on the field.

1 Input

- The first line contain an integer $n\_players$ ($0 < n\_players \leq 500$) indicating the number of players each team has *(Why there are so many? Come on, it's footballoon)*.
- The next $n\_players$ lines contain three integers x_i, y_i and $cover\_range_i$ each($0 < x_i, y_i \leq 10^6$, $0 < cover\_range_i \leq 2 * 10^6$), indicating the position of MU's ith players and his cover range.
- The next $n\_players$ lines contain two integers x_i and y_i and each ($0 < x_i, y_i \leq 1000$), indicating the position of opponent's ith players.

2 Output

One line containing the maximum number of opponent players who can be marked.

3 Example

Input:

```
2
2 0 2
3 1 3
0 3
1 0
```

Output:

```
1
```