Problem A
Apple Pen, Pineapple Pen

Time limit: 1 second
Memory limit: 2048 megabytes

Problem Description

Einsplanck is a big fan of PPAP (Pen Pineapple Apple Pen), and he has been working on finding a more convenient way to combine pens and pineapples and apples. However, those common methods are no longer enough for crazy Einsplanck! He wants to successfully combine apples and pineapples with a pen without touching fruits. After years of training, he's finally able to unleash his ultimate superpower - shooting the pen straight out of his hand!

The current situation is not good for Einsplanck. He accidentally trapped himself in a quantum realm in an experiment. After some observations, he found that the only way to escape from the quantum realm is to shoot his pen into the quantum apple and the quantum pineapple at the same time. But how can he do this?

Fortunately, after searching in his pockets, he found a plate with double slits. According to quantum mechanics, he can measure the principal quantum number n, the magnetic quantum number m, the spin quantum number s and the angular quantum number l (collectively referred to as $nmsl$) of the pen to accurately shoot it into the double-slit and split it into two pens.

However, the structures of quantum apples and quantum pineapples are very fragile. Even if he can accurately split the pen, he still needs to shoot at the exact position to hit the quantum fruits correctly. To be precise, if his shooting position is too far from the fruits, the pen will lose too much momentum before hitting the fruits, and if it is too close to the fruits, the pen's high momentum will smash them into juice.

Einsplack knows that if he is exactly k units away from both the quantum apple and the quantum pineapple, then he can use his superpowers to precisely shoot the pen into them, thereby escaping the quantum realm. Einsplack will tell you the location of the quantum fruits and the distance k. Can you help him find out how many proper shooting points there are so that he can escape from the quantum realm?

For unknown reasons (that's what the quantum realm is), all parameters about positions can only be described by integers. That is, the coordinates of the fruits and the appropriate shooting point can only be integers.

The distance Einsplack uses is the Euclidean distance, which can be calculated as the square root of the sum of the squared differences between two coordinates:

$$\text{distance}\,((x_1, y_1), (x_2, y_2)) = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

Input Format

The first line contains the number of test cases T. Then T test cases follow.

The first line of each test case contains two integers x_A and y_A, indicating the coordinates of the quantum apple. The second line contains two integers x_P and y_P, indicating the coordinates of the quantum pineapple. The third line contains a single integer k.

Output Format

Print the number of suitable shooting points.

Technical Specification

- $1 \le T \le 100$

- $-10^6 \le x_A, y_A, x_P, y_P \le 10^6$

- $0 \le k \le 10^6$

Sample Input 1

```
3
0  0
6  0
1
0  0
6  0
3
0  0
6  0
4
```

Sample Output 1

```
0
1
0
```