Problem E
Guessing Game

Andi, Budi, Chandra, and Nadia are four elementary school students who have just learned about simple arithmetic from their teacher. Now they're able to do multiple digit addition (in contrast to single digit addition which they've memorized) and decided to play a number game with this.

As the smartest student, Nadia is challenged by Andi, Budi, and Chandra to the game. Andi picked an integer A in secret between A_L and A_R, inclusively. Budi also picked an integer B in secret between B_L and B_R, inclusively. Similarly, Chandra picked an integer C in secret between C_L and C_R. They summed all the chosen integers (A + B + C) and told Nadia the total sum N, along with the ranges in which they picked their integers. Now Nadia has to guess what the numbers chosen by each of Andi, Budi, and Chandra are.

Of course, you may have noticed that there could be more than one answer to the question. For example, let N = 10, A_L = 2, A_R = 3, B_L = 4, B_R = 5, C_L = 3, C_R = 5; there are three possible answers:

- A = 2, B = 4, C = 4.
- A = 2, B = 5, C = 3.
- A = 3, B = 4, C = 3.

Given the total sum N and the ranges in which they picked their secret integers (A_L, A_R, B_L, B_R, C_L, C_R), determine how many possible answers which satisfies the question.

Input
The first line of input contains an integer T ($T \le 5{,}000$) denoting the number of cases. Each case contains with seven integers: A_L A_R B_L B_R C_L C_R N ($A_L \le A_R$; $B_L \le B_R$; $C_L \le C_R$) in a line representing the ranges of integers picked by Andi, Budi, Chandra, and the total sum, respectively. All integers are between -10^9 and 10^9, inclusively.

Output
For each case, output "Case #X: Y" (without quotes) in a line where X is the case number (starts from 1), and Y is the answer for this particular case modulo 1,000,000,007.

Sample Input	Output for Sample Input
4 2 3 4 5 3 5 10 6 10 3 7 1 9 10 0 10 0 10 0 10 10 -10 -5 4 8 3 7 0	Case #1: 3 Case #2: 1 Case #3: 66 Case #4: 10

Explanation for 1st sample case

This is the example given in the problem statement.

Explanation for 2nd sample case

The only possible answer is:

- A = 6, B = 3, C = 1

Explanation for 3rd sample case

The number of possible answer in this case is equal to $\binom{12}{2}$, which is 66.

Explanation for 4th sample case

There are 10 possible answers in this case:

- A = -10, B = 4, C = 6
- A = -10, B = 5, C = 5
- A = -10, B = 6, C = 4
- A = -10, B = 7, C = 3
- A = -9, B = 4, C = 5
- A = -9, B = 5, C = 4
- A = -9, B = 6, C = 3
- A = -8, B = 4, C = 4
- A = -8, B = 5, C = 3
- A = -7, B = 4, C = 3