Problem B
Fun with Stones

Alice and Bob will play a game with 3 piles of stones. They take turns and, on each turn, a player must choose a pile that still has stones and remove a positive number of stones from it. Whoever removes the last stone from the last pile that still had stones wins. Alice makes the first move.

The i-th pile will have a random and uniformly distributed number of stones in the range $[L_i, R_i]$. What is the probability that Alice wins given that they both play optimally?

Input

The input consists of a line with 6 integers, respectively, $L_1, R_1, L_2, R_2, L_3, R_3$. For each i, $1 \leq L_i \leq R_i \leq 10^9$.

Output

Print an integer representing the probability that Alice wins modulo $10^9 + 7$.

It can be shown that the answer can be expressed as an irreducible fraction $\frac{p}{q}$*, where* p *and* q *are integers and* $q \not\equiv 0 \pmod{10^9 + 7}$*, that is, we are interested in the integer* $p \times q^{-1} \pmod{10^9 + 7}$*.*

Input example 1	Output example 1
3 3 4 4 5 5	1

Input example 2	Output example 2
4 4 8 8 12 12	0

Input example 3	Output example 3
1 10 1 10 1 10	580000005

Input example 4	Output example 4
5 15 2 9 35 42	1