

Problem I. 2D Pyramid

Input file: *standard input*
Output file: *standard output*
Time limit: 6 seconds
Memory limit: 512 mebibytes

There is a pyramid of stones. The pyramid consists of 10^6 layers, and the i -th layer ($1 \leq i \leq 10^6$) contains i stones. The j -th stone in the i -th layer is labeled (i, j) .

In order to take the stone (i, j) from the pyramid, you must take the stones $(i - 1, j - 1)$ and $(i - 1, j)$ first (if such stones exist).

You want to take two stones (A, B) and (C, D) . You also want to do this by taking the minimum possible number of stones. In how many ways can you do this? Two ways are considered different if for some i , the i -th stone you take from the pyramid is different.

You are given T queries. The parameters for the i -th query are given by (A_i, B_i, C_i, D_i) . For each query, compute the answer modulo $10^9 + 7$.

Input

T
 $A_1 B_1 C_1 D_1$
 \vdots
 $A_T B_T C_T D_T$

- $1 \leq T \leq 300000$
- $1 \leq B_i \leq A_i \leq 10^6$
- $1 \leq D_i \leq C_i \leq 10^6$
- It is guaranteed that you can take both (A_i, B_i) and (C_i, D_i) by taking at most 10^6 stones.
- For each i , (A_i, B_i) and (C_i, D_i) are distinct.

Output

Print T lines. In the i -th line, print the answer of the i -th query.

Example

standard input	standard output
6	2
2 1 2 2	1
1 1 1000000 1000000	42
3 2 5 3	252
5 2 4 3	926737422
2015 55 1700 1300	143485143
100 50 1000 500	

Note

For the first query, there are two ways to take the stones:

- Take stones in the order $(1, 1), (2, 2), (2, 1)$.
- Take stones in the order $(1, 1), (2, 1), (2, 2)$.