The Lone Gladiator

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

You are a lone gladiator, renowned for your unorthodox fighting style, standing in the center of the Grand Arena. To earn your freedom, you must defeat the two reigning champions, B and C, in a trial by combat. This is not a chaotic free-for-all, but a structured sequence of duels.

You begin with a health points (HP). The first champion, B, has b HP, and the second champion, C, has c HP. The combat unfolds according to the following rules:

1. **The Melee Phase (3 participants):** As long as you, B, and C are all still standing (i.e., HP > 0 for all three), the combat proceeds in rounds. Each round consists of two sequential bouts:
   - First, you fight champion B.
   - Second, you fight champion C.

   This cycle of (You vs. B, then You vs. C) repeats as long as all three of you are alive.
2. **The Duel Phase (2 participants):** If at any point a champion is defeated (their HP drops to 0 or less), the combat structure changes. You will enter a 1-on-1 duel to the death against the remaining champion. You will fight this single opponent repeatedly until one of you is defeated.

Combat Mechanics:

- In any bout, there is always a winner and a loser. The winner **drains 1 HP** from the loser. That is, the winner's HP increases by 1, and the loser's HP decreases by 1.
- Your fighting style is peculiar. Your probability of winning a bout depends on the opponent:
  - The probability of you winning against champion B is p.
  - The probability of you winning against champion C is $1 - p$.

Winning and Losing:

- You are **victorious** if and only if you defeat both champions (i.e., the HP of both B and C becomes 0).
- You are **defeated** if your HP ever reaches 0. The trial ends immediately.

Given your initial HP a, the champions' HP b and c, and your win probability p against champion B, what is the total probability that you will emerge as the lone victor?

The answer can be expressed as a fraction $\frac{P}{Q}$. You should output this value modulo $M = 10^9 + 7$. This can be calculated as $(P \cdot Q^{-1}) \pmod{M}$, where Q^{-1} is the modular multiplicative inverse of Q with respect to M. The problem constraints guarantee that $Q \not\equiv 0 \pmod{M}$, so this inverse always exists.

Input

The first line of the input contains a single integer T ($1 \le T \le 10^4$), denoting the number of testcases.

For each testcase, a single line contains five integers a, b, c, u and v, where $p = u/v$ ($1 \le a, b, c, u, v \le 10^8$, $a + b + c$ **is odd** and $u < v$).

Output

For each testcase, output a single integer, denoting the desired value.

Example

standard input	standard output
2 1 2 2 4 5 3 3 1 1 5	551319652 915033883