



Data Structure & Algorithms Programme

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IPL Begins

Problem Code: **FCIPL**

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This year p footballers and q cricketers have been invited to participate in IPL (Indian Programming League) as guests. You have to accommodate them in r rooms such that-

- No room may remain empty.
- A room may contain either only footballers or only cricketers, not both.
- No cricketers are allowed to stay alone in a room.

Find the number of ways to place the players. Note though, that all the rooms are identical. But each of the cricketers and footballers are unique.

Since the number of ways can be very large, print the answer modulo 998,244,353.

Input

- The first line of the input contains a single integer T denoting the number of test cases. The description of T test cases follows.
- The first and only line of each test case contains three space-separated integers p , q and r denoting the number of footballers, cricketers and rooms.

Output

For each test case, output the number of ways to place the players modulo 998,244,353.

Constraints

- $1 \leq T \leq 100$
- $1 \leq p, q, r \leq 100$

Example Input

```
4
2 1 4
2 4 4
2 5 4
2 8 4
```

Example Output

```
0
3
10
609
```

Explanation

Example case 2: Three possible ways are:

- {Footballer 1}, {Footballer 2}, {Cricketer 1, Cricketer 2}, {Cricketer 3, Cricketer 4}

My Submissions

(/ICPCKA19/status/FCIPL,akash19jain)

All Submissions

(/ICPCKA19/status/FCIPL,akash19jain)

Successful Submissions

+

- {Footballer 1}, {Footballer 2}, {Cricketer 1, Cricketer 3}, {Cricketer 2, Cricketer 4}
- {Footballer 1}, {Footballer 2}, {Cricketer 1, Cricketer 4}, {Cricketer 2, Cricketer 3}

Please note that the rooms are identical.

Time Limit: 1 secs

Source Limit: 50000 Bytes

Languages: C, CPP14, JAVA, PYTH, PYTH 3.6, PYPY, kotlin

Practice link: [Solve practice problem](https://www.codechef.com/problems/FCIPL)
(<https://www.codechef.com/problems/FCIPL>)

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[CodeChef \(/\)](#) - A Platform for Aspiring Programmers

CodeChef was created as a platform to help programmers make it big in the world of **algorithms**, **computer programming**, and **programming contests**. At CodeChef we work hard to revive the geek in you by hosting a **programming contest** at the start of the month and two smaller programming challenges at the middle and end of the month. We also aim to have training sessions and discussions related to **algorithms**, **binary search**, technicalities like **array size** and the likes. Apart from providing a platform for **programming competitions**, CodeChef also has various algorithm tutorials and forum discussions to help those who are new to the world of **computer programming**.

[Practice Section \(/problems/easy\)](#) - A Place to hone your 'Computer Programming Skills'

Try your hand at one of our many practice problems and submit your solution in the language of your choice. Our **programming contest** judge accepts solutions in over 55+ programming languages. Preparing for coding contests were never this much fun! Receive points, and move up through the CodeChef ranks. Use our practice section to better prepare yourself for the multiple **programming challenges** that take place through-out the month on CodeChef.

[Compete \(/problems/easy\)](#) - Monthly Programming Contests, Cook-off and Lunchtime

Here is where you can show off your **computer programming skills**. Take part in our 10 days long monthly coding contest and the shorter format Cook-off and Lunchtime **coding contests**. Put yourself up for recognition and win great prizes. Our **programming contests** have prizes worth up to INR 20,000 (for Indian Community), \$700 (for Global Community) and lots more CodeChef goodies up for grabs.

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