

PRACTICE & LEARN ([https://www.codechef.com/problems/school/?itm\\_medium=navmenu&itm\\_campaign=problems\\_head](https://www.codechef.com/problems/school/?itm_medium=navmenu&itm_campaign=problems_head))

COMPETE ([https://www.codechef.com/contests/?itm\\_medium=navmenu&itm\\_campaign=allcontests\\_head](https://www.codechef.com/contests/?itm_medium=navmenu&itm_campaign=allcontests_head))

DISCUSS ([https://discuss.codechef.com/?itm\\_medium=navmenu&itm\\_campaign=discuss\\_head](https://discuss.codechef.com/?itm_medium=navmenu&itm_campaign=discuss_head))

OUR INITIATIVES (<https://www.codechef.com/#>)

ASSOCIATE WITH US (<https://www.codechef.com/corporates>)

MORE (<https://www.codechef.com/ratings/all>)



The Time to Act is Now

#CodersFightCovid

Donate to help fight Covid 19

(<https://bit.ly/3eQStQG>)

[Home](#) » [Complete Contests](#) » [May Challenge 2021 Division 3 \(Rated\)](#) (/MAY21C?order=desc&sortBy=succesful\_submissions) » Modular Equation

# Modular Equation

Problem Code: **MODEQ**

Submit (/MAY21C/submit/MODEQ)



Given integers  $N$  and  $M$ , find the number of ordered pairs  $(a, b)$  such that  $1 \leq a < b \leq N$  and  $((M \bmod a) \bmod b) = ((M \bmod b) \bmod a)$ .

## Input

- The first line contains an integer  $T$ , the number of test cases. Then the test cases follow.
- The only line of each test case contains two integers  $N, M$ .

## Output

For each testcase, output in a single line the answer to the problem.

## Constraints

- $1 \leq T \leq 1000$
- $2 \leq N \leq 10^6$
- $1 \leq M \leq 5 \cdot 10^5$
- The sum of  $N$  over all test cases does not exceed  $10^6$ .

**Note:** Multiplier for JAVA for this problem is reduced to 1.25 instead of usual 2.

## Subtasks

**Subtask #1 (10 points):**

- $1 \leq T \leq 10$
- $2 \leq N \leq 10^3$
- $1 \leq M \leq 10^5$

**Subtask #2 (40 points):**

- $1 \leq T \leq 100$
- $2 \leq N \leq 10^5$
- $1 \leq M \leq 10^5$
- The sum of  $N$  over all test cases does not exceed  $10^6$ .

**Subtask #3 (50 points):** Original Constraints

## Sample Input

```
3
3 5
3 6
3 10
```

## Sample Output

### Submission Ends In

8 13 24  
Days Hrs Min

My Submissions  
(/MAY21C/status/MODEQ,an

All Submissions  
(/MAY21C/status/MOC

Successful Submissions



2  
3  
2

## Explanation

**Test Case 1:** The valid pairs are  $\{(1, 2), (1, 3)\}$ .

**Test Case 2:** The valid pairs are  $\{(1, 2), (1, 3), (2, 3)\}$ .

**Test Case 3:** The valid pairs are  $\{(1, 2), (1, 3)\}$ .

Author: [daanish\\_adm \(/users/daanish\\_adm/\)](/users/daanish_adm/)  
Date Added: 28-04-2021  
Time Limit: 1 secs  
Source Limit: 50000 Bytes  
Languages: CPP14, C, JAVA, PYTH 3.6, PYTH, CS2, ADA, PYPY, PYP3, TEXT, CPP17, PAS fpc, RUBY, PHP, NODEJS, GO, TCL, HASK, PERL, SCALA, kotlin, BASH, JS, PAS gpc, BF, LISP sbcl, CLOJ, LUA, D, R, CAML, rust, ASM, FORT, FS, LISP clisp, SQL, swift, SCM guile, PERL6, CLPS, WSPC, ERL, ICK, NICE, PRLG, ICON, PIKE, COB, SCM chicken, SCM qobi, ST, NEM, SQLQ

[Submit \(/MAY21C/submit/MODEQ\)](/MAY21C/submit/MODEQ)

## Comments ▶

[CodeChef is a competitive programming community.](#)

[About CodeChef \(/aboutus/\)](/aboutus/) [Contact Us \(/contactus/\)](/contactus/)

The time now is: 01:35:59 AM  
Your IP: 103.218.168.252

CodeChef uses SPOJ © by [Sphere Research Labs \(https://www.sphere-research.com\)](https://www.sphere-research.com)

In order to report copyright violations of any kind, send in an email to [copyright@codechef.com \(mailto:copyright@codechef.com\)](mailto:copyright@codechef.com)

### [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 \(/problems/easy/\)](/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 \(/contests/\)](/contests/) - 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.

#### Programming Tools

[Online IDE \(/ide/\)](/ide/)

[Upcoming Coding Contests \(/contests#future-contests\)](/contests#future-contests)

[Contest Hosting \(/hostyourcontest/\)](/hostyourcontest/)

[Problem Setting \(/problemsetting/\)](/problemsetting/)

[CodeChef Tutorials \(/wiki/tutorials\)](/wiki/tutorials)

[CodeChef Wiki \(/wiki\)](/wiki)

#### Practice Problems

[Easy \(/problems/easy/\)](/problems/easy/)

[Medium \(/problems/medium/\)](/problems/medium/)

[Hard \(/problems/hard/\)](/problems/hard/)

[Challenge \(/problems/challenge/\)](/problems/challenge/)

[Peer \(/problems/extcontest/\)](/problems/extcontest/)

[School \(/problems/school/\)](/problems/school/)

[FAQ's \(/wiki/faq/\)](/wiki/faq/)

#### Initiatives

[Go for Gold \(/goforgold/\)](/goforgold/)

[CodeChef for Schools \(/school/\)](/school/)

[College Chapters \(/college-chapters/\)](/college-chapters/)

[CodeChef for Business \(https://business.codechef.com\)](https://business.codechef.com)

#### Policy

[Terms of Service \(/terms/\)](/terms/)

[Privacy Policy \(/privacy-policy/\)](/privacy-policy/)

[Refund Policy \(/refund-policy/\)](/refund-policy/)

[Code of Conduct \(/codeofconduct/\)](/codeofconduct/)

[Bug Bounty Program \(/bug-bounty-prog\)](/bug-bounty-prog)