03 : 14 : 18
HRS MIN SEC

Finish Test

5
LIVE EVENTS

Shopee Programming Contest #1

LIVE

INVITE ONLY ACCESS

Jun 27, 2020, 01:00 PM WIB - Jun 27, 2020, 02:00 PM WIB

INSTRUCTIONS

PROBLEMS

SUBMISSIONS

LEADERBOARD

ANALYTICS

JUDGE

[← Problems / Sequences](#)

Sequences

Max. score: 30

You are on a company visit to Shopee. During the office tour, you noticed that there seems to be a random scribbling on one of the walls. After looking at it closely, you noticed it is actually an algorithm question! Below is the question:

You are given N functions $f(i, j)$ with parameters A_i, B_i, C_i , where the value of $f(i, j)$ is equal to $A_i \times j^2 + B_i$ for each $1 \leq j \leq C_i$. Find how many sequences $(i_1, j_1), (i_2, j_2), \dots, (i_M, j_M)$ of length M are there in which the following holds:

- $f(i_1, j_1) + f(i_2, j_2) + \dots + f(i_M, j_M)$ is divisible by K

Two sequences are different if there is at least one index k , such that $i_k \neq i_{k'}$ or $j_k \neq j_{k'}$

You quickly take note of the question, as maybe it is a draft for an interview question. Solve the question to increase your chance of acing the future interview at Shopee!

Input

The first line contains 3 integers N ($1 \leq N \leq 5,000$), M ($1 \leq M \leq 1,000,000,000$), and K ($1 \leq K \leq 2,000$).

The next N lines each contains 3 integers A_i, B_i, C_i ($0 \leq A_i, B_i < K$) and C_i ($1 \leq C_i \leq 1,000,000,000$), denoting the parameters for the i -th function.

Output

One line containing a single integer, the number of the sequence. Since this number can be very large, output its value modulo 10^9+7 .

SAMPLE INPUT

```
3 2 6
0 3 2
1 2 3
2 5 1
```

?

SAMPLE OUTPUT

12

5

LIVE EVENTS

Explanation

Below are all the possible sequences:

1. (1, 1), (1, 1)
2. (1, 1), (1, 2)
3. (1, 1), (2, 1)
4. (1, 2), (1, 1)
5. (1, 2), (1, 2)
6. (1, 2), (2, 1)
7. (2, 1), (1, 1)
8. (2, 1), (1, 2)
9. (2, 1), (2, 1)
10. (2, 2), (2, 2)
11. (2, 3), (3, 1)
12. (3, 1), (2, 3)

Time Limit: 5.0 sec(s) for each input file.

Memory Limit: 256 MB

Source Limit: 1024 KB

Marking Scheme: Score is assigned if any testcase passes.

Allowed Languages: Bash, C, C++, C++14, C++17, Clojure, C#, D, Erlang, F#, Groovy, Haskell, Java, Java 8, Java 14, JavaScript(Rhino), JavaScript(Node.js), Julia, Kotlin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, Python 3.8, R(RScript), Racket, Ruby, Rust, Scala, Swift-4.1, Swift, TypeScript, Visual Basic

CODE EDITOR

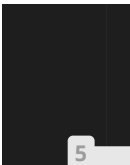
Save

C (gcc 5.4.0)



```
1  /*
2  // Sample code to perform I/O:
3  #include <stdio.h>
4
5  int main(){
6      int num;
7      scanf("%d", &num);           // Reading input from STDIN
8      printf("Input number is %d.\n", num); // Writing output to STDOUT
9  }
10
11 // Warning: Printing unwanted or ill-formatted data to output will cause the test
12 // cases to fail
13 */
14 // Write your code here
15
```

?



1:1 vsco

LIVE EVENTS

☒ Provide custom input

COMPILE & TEST

SUBMIT

Tip: You can submit any number of times you want. Your best submission is considered for computing total score.

Your Rating:

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