

03 Hr 18 Min  
12 Sec

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## Coding Area

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ONLINE EDITOR (E)

## Lazy Student

## + Problem Description

There is a test of Algorithms. Teacher provides a question bank consisting of  $N$  questions and guarantees all the questions in the test will be from this question bank. Due to lack of time and his laziness, Codu could only practice  $M$  questions. There are  $T$  questions in a question paper selected randomly. Passing criteria is solving at least 1 of the  $T$  problems. Codu can't solve the question he didn't practice. What is the probability that Codu will pass the test?

## + Constraints

$$0 < T \leq 10000$$

$$0 < N, T \leq 1000$$

$$0 \leq M \leq 1000$$

$$M, T \leq N$$

## + Input Format

First line contains single integer  $T$  denoting the number of test cases.

First line of each test case contains 3 integers separated by space denoting  $N$ ,  $T$ , and  $M$ .

## + Output

For each test case, print a single integer.

If probability is  $p/q$  where  $p$  &  $q$  are co-prime, print  $(p * \text{mullInv}(q))$  modulo 1000000007, where  $\text{mullInv}(x)$  is multiplicative inverse of  $x$  under modulo 1000000007.

## + Timeout

1

## + Test Case

### Example 1

#### Input

1

4 2 1

#### Output

5000000004

#### Explanation

The probability is  $\frac{1}{2}$ . So output is 5000000004.

## Upload Solution [ Question : E ]

☐ I, **yashraj dighe** confirm that the answer submitted is my own. ☐ Took help from online sources (attributions)

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