PKP Knows Nothing 2

"You know nothing, PKP Snow"
PKP Snow is tired of hearing this. Now he wants to prove that he does know something!

He has **N** distinct dragonglass knives in front of him. He needs to choose **R** knives out of these. Everyone thinks PKP doesn't know how many ways he can choose **R** knives out of **N**. Help PKP finding the answer and thus prove them wrong.But the answer can be very big, so PKP will tell the answer modulo **M**.

Given **N**, **R**, **M**, your job is to find the answer for PKP.

Input

Input starts with an integer **T**, denoting the number of test cases. Then each of next T lines contains three integers **N**, **R** and **M**.

Constraints

1 <= T <= 100
1 <= N <= 100000
0 <= R <= 100000
1 <= M <= 1000000000000

Output

For each test case, print the answer PKP has to find, number of ways to choose R knives out of N modulo M. Print each answer in separate lines like in sample output.

Example

Input:
5
5 3 100
5 3 2
5 3 7
1 1 20
100 50 1000000009
Output:
10
0
3
1
933591892

Explanation: PKP can choose 3 knives out of 5 knives in 10 ways.
10 modulo 100 is 10 while 10 modulo 7 is 3. A modulo B means the remainder found after dividing A by B.

[Original Setter of this problem is Tahsin Masrur , RUET]