Power Mod

1 seconds, 64 megabytes

This question is very simple

Given Q Questions

For each question, given a,b,c evaluate $a^b \mod c$

Input Data

First line consists of single number Q representing the number of questions

Next Q Lines consists of three number a,b,c representing a,b,c value of that question

Output Data

 $\operatorname{Has} Q \operatorname{lines}$

Each line contains answer to each questions

Constraints

 $1 \leq Q \leq 100~000$

 $2 \le a, b, c \le 2 \cdot 10^9$

Subtasks

- 1. (10 Points) $a^b \le 2^{63} 1$
- 2. (10 Points) c = 2
- 3. (10 Points) Q = 1
- **4.** (10 Points) $b \le 1000$
- 5. (60 Points) No Additional Constraint

Examples of Input and Output Data

Input Data Examples	Output Data Examples
1	1
3 4 5	
2	1
5 3 2	0
7 7 7	

Note

Sample Test Case 1 Explanation

 $3^4=81 \ \mathrm{and} \ 81 \ \mathrm{mod} \ 5=1$ thus, the answer to this question is 1