

# Calculating very big numbers very quickly

Given numbers A, B, C, calculate  $(A \text{ to the power of } B) \bmod C$ .

## Input

The first line will contain an integer x, the number of test cases. x lines follow, each with three integers A, B, and C, the A, B, and C mentioned above.

Conditions:

A is no more than  $1e5$

B is no more than  $1e18$

C is no more than  $1e7$

## Output

For each test case, print  $(A^B) \bmod C$ .

## Example

**Input:**

```
1
1 1 2
```

**Output:**

```
1
```