Eugene and Big Number

Eugene must do his homework, but he is struggling.

He has three integer numbers: *A*, *N*, *M*. He writes number *A* on the board *N* times **in a row**. Let's call the resulting big number *X*. Help Eugene find *X* modulo *M*.

Input Format

First line contains *T*, the number of testcases.
Each testcase contains three numbers: *A*, *N*, *M* separated by a single space.

Constraints

- $1 \leq T \leq 200$

- $0 \leq A \leq 10^3$

- $0 < N < 10^{12}$

- $1 < M < 10^9$

Output Format

Print the required answer for each testcase in a new line.

Sample Input

```
2
12 2 17
523 3 11
```

Sample Output

```
5
6
```

Explanation

First testcase:
A = 12
N = 2
X = 1212
1212 modulo 17 = 5

Second testcase:
A = 523
N = 3
X = 523523523
523523523 modulo 11 = 6