

# Modulo Exponent

Time limit: 1 sec

Given three integer,  $X$ ,  $N$  and  $K$ . Calculate the value of  $X^N \bmod K$  where  $A \bmod K$  is the remainder of  $A$  divided by  $K$ .

Please note the following properties of modulo.

- $(p + q) \bmod k = ((p \bmod k) + (q \bmod k)) \bmod k$
- $(p * q) \bmod k = ((p \bmod k) * (q \bmod k)) \bmod k$

## Input

- The first line of input contains three integers  $X$ ,  $N$  and  $K$ . where  $1 \leq x, k \leq 9,999$  and  $1 \leq N \leq 2^{31}$ .

## Output

Only one line containing the value of  $X^N \bmod K$

## Example

Input	Output
2 5 100	32
2 5 10	2
123 4727 153	81