

Counting Palindromes

Problem ID: countingpalindromes

A palindrome number is a non-negative number without leading zeroes, that reads the same forward or backward. For example, 12321, 44 and 9 are palindrome numbers, while 010, 123 and 100 are not.

Given a positive integer n , a prime number p and a non-negative integer k less than p . A palindrome number x is called a good palindrome, iff x is equal to k modulo p . In other words, the remainder when x is divided by p equals k .

Please count the number of good palindromes with exactly n digits. As this number can be very large, please calculate the result modulo $10^9 + 7$.

Input

The input contains 3 integers n , p and k ($1 \leq n \leq 10^{18}$, $2 \leq p \leq 1\,000$, $0 \leq k < p$). It is guaranteed that p is a prime.

Output

Output a single integer — the number of good palindromes with exactly n digits, modulo $10^9 + 7$.

Explanation of Sample input

The good palindromes are 0, 2, 4, 6 and 8.

Sample Input 1

1 2 0

Sample Output 1

5

1 2 0	5
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