

Problem J. Ceizenpok's formula

Input file: `stdin`
Output file: `stdout`
Time limit: 1 second
Memory limit: 256 megabytes

Dr. Ceizenpok from planet `i1c5l` became famous across the whole Universe thanks to his recent discovery — the Ceizenpok's formula. This formula has only three arguments: n , k and m , and its value is a number of k -combinations of a set of n modulo m .

While the whole Universe is trying to guess what the formula is useful for, we need to automate its calculation.

Input

Single line contains three integers n , k , m , separated with spaces ($1 \leq n \leq 10^{18}$, $0 \leq k \leq n$, $2 \leq m \leq 1\,000\,000$).

Output

Write the formula value for given arguments n , k , m .

Examples

<code>stdin</code>	<code>stdout</code>
2 1 3	2
4 2 5	1