

Divisors [0]

time limit per test: 1 second
memory limit per test: 256 megabytes

input: standard input
output: standard output

points: 100 · problem code: divisors0 · author: glipR

Let's consider the string of all natural numbers: 1, 2, 3, 4, ...

We'd like to find the sum of the first n values of this sequence, although that alone is a bit boring (how would we do this?)

Instead, we'd like to find the sum, only after doing a simple operation to the individual sequence values - taking their value modulo some m .

For example, for $n = 5$, $m = 4$, the sequence of the first 5 elements would be: 1, 2, 3, 0, 1, and the total sum would be 7.

Input

Input will contain two space-separated integers n and m , mirroring the definition from the statement

Output

Output a single integer representing the sum of the first n elements modulo m .

Constraints

- $1 \leq n \leq 10^9$
- $1 \leq m \leq 10^9$

Example

Input

5 4

Output

7