

# Amanojaku

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            2.5 seconds  
Memory limit:         1024 megabytes

You are playing a number-calling game with Akie.

The rules of the game are as follows: You and Akie take turns calling numbers, starting with you. Each time, you can call any positive integer between 1 and  $2n$  that hasn't been called yet. Since Akie is a born coward, she will only call the smallest positive integer that hasn't been called yet. The game lasts for  $n$  rounds, and all  $2n$  positive integers are called exactly once.

Let  $S$  be the sum of all the numbers called by Akie. If  $S \geq k$ , Akie wins.

Given the constant  $k$ , how many scenarios allow **Akie** to win? The answer should be modulo  $p$ . Two scenarios are considered different if and only if there exists a round where you call a different number or Akie calls a different number.

## Input

One line containing three positive integers  $n$ ,  $k$ , and modulus  $p$ .

It is guaranteed that  $1 \leq n \leq 100$ ,  $\frac{n(n+1)}{2} \leq k \leq n(n+1)$ ,  $10^8 + 7 \leq p \leq 10^9 + 9$ , and  $p$  is prime.

## Output

An integer representing the answer.

## Examples

standard input	standard output
2 4 998244353	6
5 20 1000000007	2688

## Note

When  $n = 2$ , all the possible number sequences called out are:  $(1, 2, 3, 4)$ ,  $(1, 2, 4, 3)$ ,  $(2, 1, 3, 4)$ ,  $(2, 1, 4, 3)$ ,  $(3, 1, 2, 4)$ ,  $(3, 1, 4, 2)$ ,  $(4, 1, 2, 3)$ ,  $(4, 1, 3, 2)$ . The 2nd number and the 4th number are called by Akie.