NSquare Sum (Easy)

Given two integers N (N <= 10^18) and a prime number P (1 < P < 10^18), find the lowest number x such that there're not N integers greater or equal to 0 whose sum of squares is equal to x.

N = 2, P = 2
x = 3mod2
= 1
0 = $0^2 + 0^2$
1 = $1^2 + 0^2$
2 = $1^2 + 1^2$
4 = $2^2 + 0^2$

Input

There're two integers N (1 <= N <= 10^18) and a prime number P (1 < P < 10^18). You have to print the answer modulo P.

Output

You have to print an integer x mod P (-1 < x < 10^18 + 1) that satisfies the problem. If there's no number x, print "Impossible".

Example

Input:
1 3

Output:
2

Input:
13 7

Output:
Impossible