

Series Sum II

time limit per test: 2 seconds
memory limit per test: 488.3 megabytes
input: standard input
output: standard output

points: 30 · problem code: seriessumii · author: jszqlw

Problem Statement

You are given three integers n , x and k .

You have the following infinite sequence $S = [1 \bmod k, (1 + 2) \bmod k, (1 + 2 + 3) \bmod k, \dots]$, in other words $S_i = (\sum_{j=1}^i j) \bmod k$.

Determine at which index (one-indexed) the n^{th} occurrence of x is in the sequence S if x occurs at least n times, otherwise output -1 .

Input Format

Your first line will contain three space-separated integers n , x and k respectively.

Output Format

You should output a single integer, representing the index (one-indexed) in S at which the n^{th} occurrence of x appears. If it does not appear at least n times, then output -1 .

Constraints

- $1 \leq n \leq 10^9$
- $1 \leq k \leq 10^2$
- $0 \leq x < k$

Sample Cases

Input 1

```
1 1 10
```

Output 1

```
1
```

Input 2

```
2 1 10
```

Output 2

```
6
```

Input 3

```
20 2 13
```

Output 3

```
124
```

Input 4

20 2 10

Output 4

-1

Template

```
n, x, k = map(int, input().split())  
  
# print your output
```