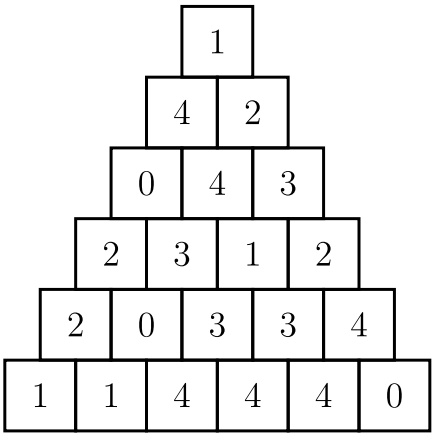
Yet Another Contest 5 P1 - Number Pyramid

Time limit: 2.0s **Memory limit:** 256M

Josh is playing with number pyramids! A number pyramid consists of N rows, labelled from 1 to N from top to bottom. The i-th row contains i cells, each containing a single integer between 0 and $K-1$ (inclusive).

A number pyramid has a special property; each cell (apart from those on the N-th row) contains an integer equal to the sum of the two integers in the cells directly below it, modulo K. Formally, if $v_{i,j}$ is the integer written in the j-th cell (from the left) of the i-th row, then $v_{i,j} = (v_{i+1,j} + v_{i+1,j+1}) \bmod K$. A number pyramid with $N = 6$ and $K = 5$ is shown below for clarity.



Josh would like to construct a number pyramid such that the integer written in the topmost cell is X (i.e. $v_{1,1} = X$). He wonders the following question: what is the lexicographically largest sequence of integers written in the bottom row of any such number pyramid? Formally, what is the lexicographically largest possible sequence $v_{N,1}, v_{N,2}, \ldots, v_{N,N}$? Note that Josh cannot choose the values of N and K, and that all integers in the pyramid must be between 0 and $K-1$ (inclusive).

Sequence $a_1, a_2, a_3, \ldots, a_N$ is lexicographically larger than sequence $b_1, b_2, b_3, \ldots, b_N$ if, for the smallest i such that $a_i \neq b_i$, $a_i > b_i$.

Constraints

$2 \leq N \leq 10^6$

$1 \leq K \leq 10^9$

$0 \leq X < K$

Subtask 1 [10%]

$N = 2$

Subtask 2 [20%]

$2 \leq N \leq 200$

$1 \leq K \leq 200$

Subtask 3 [30%]

$2 \leq N \leq 2000$

Subtask 4 [40%]

No additional constraints.

Input Specification

The only line contains three space-separated integers, N, K, and X respectively.

Output Specification

On a single line, output N space-separated integers, representing the lexicographically largest possible sequence of integers written on row N.

Sample Input

```
3 2 1
```

Sample Output

```
1 1 0
```

Explanation

The optimal number pyramid is shown below.