Fixed Point Permutations

Time limit: 1 second

A permutation of size n is a list of integers $(p_1, p_2, …, p_n)$ from 1 to n such that each number appears exactly once.

The number of *fixed points* of a permutation is the number of indices i such that $p_i = i$.

Given three numbers n, m, and k, find the kth lexicographically smallest permutation of size n that has exactly m *fixed points* (or print **−1** if there are fewer than k permutations that satisfy the condition).

Input

The single line of input contains three space-separated integers

$$n \ (1 \leq n \leq 50) \quad m \ (0 \leq m \leq n) \quad k \ (1 \leq k \leq 10^{18})$$

where n is the size of the permutations, m is the number of desired *fixed points*, and the output should be the kth lexicographically smallest permutation of the numbers 1 to n that has exactly m *fixed points*.

Output

Output the desired permutation on a single line as a sequence of n space-separated integers, or output **−1** if no such permutation exists.

Sample Input	Sample Output
3 1 1	1 3 2
3 2 1	−1
5 3 7	2 1 3 4 5