Problem F
Carny Magician
Time limit: 1 second

Charles and Ada are watching a magician shuffling a deck of thirteen numbered cards, which were originally ordered. The magician spreads the cards out on the table.

Ada exclaims, "Odd; ten of the cards are in their original locations!"

Charles thinks for a moment, and says, "Not only that, but it is the forty-second such ordering!"

Can you figure out the order of the cards? Formally, the magician's cards can be considered as a permutation $p_1, p_2, \ldots, p_n$, that contains each number from 1 to n exactly once. The number of fixed points 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.

Input

The input will be a single line containing the three integers n, m, and k, with $0 \leq m \leq n$, $1 \leq n \leq 50$, and $1 \leq k \leq 10^{18}$.

Output

On a single line, write the permutation as a sequence of n space-separated integers. If there are fewer than k permutation satisfying the conditions, then print -1 on a single line.

Examples

Sample Input 1	Sample Output 1
`3 1 1`	`1 3 2`

Sample Input 2	Sample Output 2
`3 2 1`	`-1`

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