

Problem B. Interesting Subsegments

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 512 mebibytes

A subsegment (contiguous subarray) of an array is *interesting* if the sum of values on this subsegment is divisible by 3.

You are given two integers n and k . Your goal is to construct the lexicographically minimal array of length n such that it consists only of integers 0, 1, and 2, and has exactly k distinct interesting subsegments.

Array a of length n is lexicographically smaller than array b of the same length if there is $1 \leq i \leq n$ such that $a_j = b_j$ for $j < i$ and $a_i < b_i$. Two subsegments are distinct if some element of the array belongs to one subsegment but not to the other.

Input

The only line of input contains two integers n and k ($1 \leq n \leq 10^6$, $0 \leq k \leq 10^{18}$).

Output

Output -1 if there is no such array. Otherwise, output the lexicographically smallest array of size n which satisfies the constraints.

Examples

<i>standard input</i>	<i>standard output</i>
5 3	0 1 0 1 0
5 5	-1