

A. Mashmokh and Numbers

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

It's holiday. Mashmokh and his boss, Bimokh, are playing a game invented by Mashmokh.

In this game Mashmokh writes sequence of n distinct integers on the board. Then Bimokh makes several (possibly zero) moves. On the first move he removes the first and the second integer from the board, on the second move he removes the first and the second integer of the remaining sequence from the board, and so on. Bimokh stops when the board contains less than two numbers. When Bimokh removes numbers x and y from the board, he gets $\gcd(x, y)$ points. At the beginning of the game Bimokh has zero points.

Mashmokh wants to win in the game. For this reason he wants his boss to get exactly k points in total. But the guy doesn't know how to choose the initial sequence in the right way.

Please, help him. Find n distinct integers a_1, a_2, \dots, a_n such that his boss will score exactly k points. Also Mashmokh can't memorize too huge numbers. Therefore each of these integers must be at most 10^9 .

Input

The first line of input contains two space-separated integers n, k ($1 \leq n \leq 10^5$; $0 \leq k \leq 10^8$).

Output

If such sequence doesn't exist output -1 otherwise output n distinct space-separated integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^9$).

Examples

input
5 2
output
1 2 3 4 5
input
5 3
output
2 4 3 7 1
input
7 2
output
-1

Note

$\gcd(x, y)$ is greatest common divisor of x and y .

Codeforces Round #240 (Div. 1)

Finished

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Problem tags

constructive algorithms

number theory

No tag edit access

→ Contest materials

- Announcement 
- Tutorial 