

Grammy and HearthStone

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

“HearthStone” is an online digital collectible card game developed and published by Blizzard Entertainment.

In the game, players have to summon minions and cast spells to attack their opponent.

The following 5 paragraphs illustrate the rules that you need to know in order to solve this problem.

Each minion has its attack value and its hitpoint value.

When a minion receives damage, its hitpoint value decreases by the damage value.

Whenever a minion has a non-positive hitpoint value, it dies.

Minions can have “Deathrattle(x/y)” properties, that is, when this minion dies, another minion with x attack and y hitpoint will be summoned instantly. Additionally, the summoned minion does not have any “Deathrattle” property.

“Defile” is a spell. When cast, the spell will deal 1 damage to all minions, and if any minion dies, the spell will be automatically cast again.



Grammy is a famous player who ranked top 10^9 among all “HearthStone” players. Nonetheless, she is unhappy because she does not know how to use “defile” just like the textbook. She wants to do some practice.

n minions have been placed on the battlefield. The i -th of them have 0 attack, 10^9 hitpoint, and “Deathrattle(i/i)”. Grammy can modify each minion’s hitpoint to another positive value before she cast the last “Defile” in her hand, can you help her to find out a way to modify each minion’s hitpoint so that the recasting effect of the spell will be triggered $2n$ times? In other words, the spell is cast $2n + 1$ times in total, manually or automatically.

Input

The input contains only a single case.

The only line of the input contains a positive integer n ($1 \leq n \leq 1\,000\,000$), indicating the total number of minions on the battlefield.

Output

If the solution exists, output n integers in one line, the i -th one represents the hitpoint value of the i -th minion after Grammy’s modification.

Otherwise output “-1” in one line.

If there are multiple solutions, output any.

Examples

standard input	standard output
3	-1
8	8 1 13 11 2 4 5 6

Note

The rules of “HearthStone” in this problem might be different from the original game, so please read the statement carefully.