

Find Right Triangle

Given natural number N you have to find a right triangle let the lengths of its sides are a, b, c

This right triangle must satisfy:

1- a, b, c are positive integers

2- $a < b < c$

3- $c - b = 1$

4- $a = N$

Input

The first line of input file has one integer T ($1 \leq T \leq 10^5$) the number of test cases then T lines.

each line consist of one integer N ($1 \leq N \leq 10^9$)

Output

if there is such right triangle then output its sides lengths a, b, c respectively otherwise output -1

Example

Input:

3

3

4

5

Output:

3 4 5

-1

5 12 13