Lagrange's four-square theorem states that every positive integer can be expressed as the sum of four squares of integers. For example:

$3 = 1^2 + 1^2 + 1^2 + 0^2$
$31 = 5^2 + 2^2 + 1^2 + 1^2$

However some positive integers can be expressed even as the sum of three squares of non-negative integers. For example:

$3 = 1^2 + 1^2 + 1^2$
$17 = 0^2 + 1^2 + 4^2$

In this problem you have to find expression of given integer K as the sum of three squares, or state that it is impossible.

Input

The first line contains integer N ($0 < N \leq 10000$), it is number of tests. Each of the next N lines contains a positive integers K ($0 < K \leq 50000$).

Output

For each test case print a line formatted like this: 'a b c'. Where $a \leq b \leq c$ and $K = a^2 + b^2 + c^2$. If there is more than one possible answer, print the one that comes first lexicographically. If expression in three squares of non-negative integers do not exist print '`-1`' (see examples).

Sample Input

```
3
13
15
17
```

Sample Output

```
0 2 3
-1
0 1 4
```