D Sum of Four Squares

You will be given an integer **n**, and you will have to express as summation of four square-numbers.

For example 30 can be written as summation of four squares in the following way:

$$30 = 4*4 + 3*3 + 2*2 + 1*1$$

If a number can be expressed as summation of four squares in more than one ways, any one of them will do. A square is a number whose square root is also an integer.

Input

Input starts with an integer **T (≤ 120000)**, denoting the number of test cases.

Each case contains an integer **n ($0 \le n < 10^{17}$)** in a line.

Output

For each case, print a line containing four integer numbers **a, b, c, d** such that

$$\mathbf{n = a^2 + b^2 + c^2 + d^2}$$

If the number cannot be expressed as summation of four squares then you should print **"Impossible."** instead.

Sample Input	Output for Sample Input
3 30 2 0	5 2 0 1 1 0 0 1 0 0 0 0

Note

As the size of the input file is large, so use faster I/O functions like scanf(), printf().

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