Problem D. Diophantine Equation

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	64 megabytes

Bikarp has a square of a positive integer n^2. He wants to split it into a sum of two cubes of positive integers. In other words, Bikarp wants to solve the following Diophantine equation

$$n^2 = x^3 + y^3$$

in positive integers, where n is fixed.

Find a solution of this equation or determine that it doesn't exist.

Input

The first line contains integer T — the number of test samples ($1 \le T \le 3000$).

The i-th of the following T lines contains a single integer n ($1 \le n \le 10^9$).

Output

Output T lines. The i-th of them should contain the answer for the i-th test sample: either "`impossible`", if n cannot be decomposed, or two positive integers x and y.

If some test sample has several solutions — output any of them.

Example

standard input	standard output
4 1 2 3 4	impossible impossible 2 1 2 2