Problem D: Pythagorean Triples

A triple of positive integers x, y, z such that $x^2+y^2=z^2$ is called a Pythagorean triple. You are given a sequence of positive integers on input. Your goal is to print all Pythagorean triples in this sequence.

Input Specification

The input file may contain several data sets. Each data set starts with one line containing an integer n equal to the number of numbers in this data set (at most 50,000), followed by n lines, with one number per line. Duplicates may occur. Each integer will be at most 200,000. The line containing 0 indicates the end of the input.

Output Specification

For each data set print the set of all Pythagorean triples in this set, *without duplicates*, one triple per line, each triple in increasing order separated by a single space, and all triples sorted in increasing order with respect to the smallest number in the triple. The output for each data set, except for the last one, should be followed by an empty line.

Your computation must finish within 60 seconds.

Sample Input	Output for Sample Input
7 9 3 13 12 3 5 4 12 5 11 3 25 4 13 37 35 12 24 7 15 0	3 4 5 5 12 13 3 4 5 5 12 13 7 24 25 12 35 37

M.Ch.