Problem L. Square of Triangles

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	2048 megabytes

You are given the squares of the lengths of the sides of four triangles. Determine if it is possible to arrange them (via translation, rotation, and reflection) into a square. No triangles may overlap, and there should be no gaps or holes.

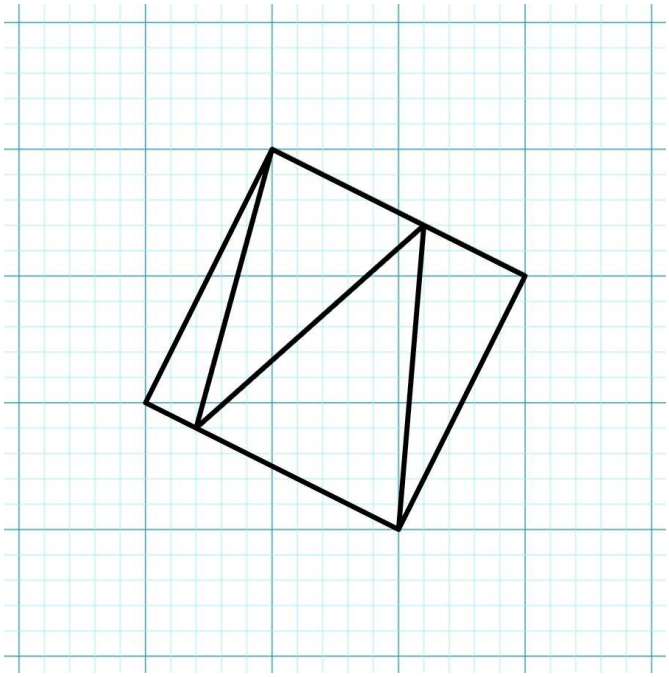


Рис. 4: A solution to the third test case in the sample input.

Input

The first line of input contains a single integer t ($1 \le t \le 20$), which is the number of test cases.

Each of the next $4 \cdot t$ lines describes t test cases, consisting of four triangles each, one triangle per line. Each triangle consists of three integers a, b and c ($1 \le a, b, c \le 10^7$). Each of the integers is equal to the **square** of the length of a side of a triangle. For example, if the three sides of a triangle have lengths 3, 4 and 5, then the input would be `9 16 25`. The integers will **not** necessarily be perfect squares. It is guaranteed that the given triples each represent a triangle of positive area.

Output

Output t lines. For each test case in order, output a single line with a single integer, which is 1 if the four triangles of the test case can be arranged into a square, and 0 otherwise.

Example

standard input	standard output
3 1 1 2 2 1 1 2 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 5 125 130 125 20 145 45 130 145 145 145 80	1 0 1