

# 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.

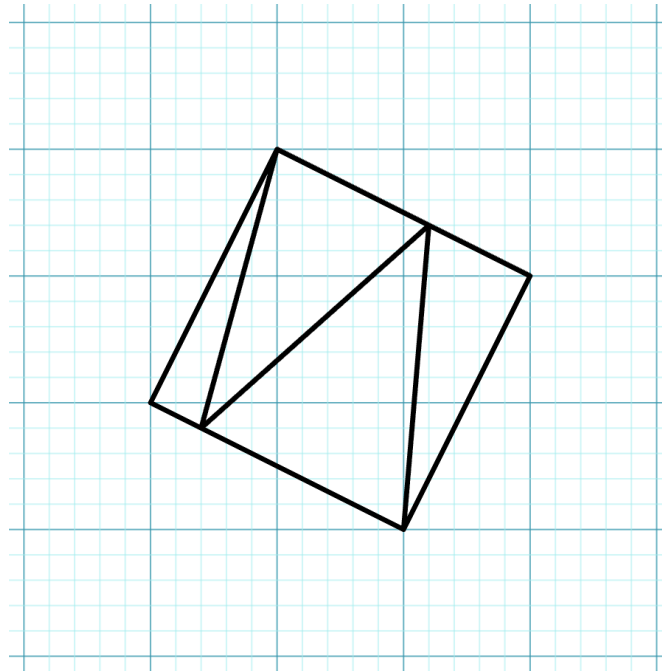


Рис. 1: A solution to the third test case in the sample input.

## Input

The first line of input contains a single integer  $t$  ( $1 \leq t \leq 20$ ), 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  $c$  ( $1 \leq a, b, c \leq 10^7$ ). 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 1 2	0
2 1 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	