2012 ACU Programming Contest Series

Problem 5: Triangle

The Amalgamated Collective for Ubiquity (ACU) provides the following definitions.

A **triangle** is a geometric figure with three straight sides.

An **isosceles triangle** is any triangle with two sides of the same length.

An **equilateral triangle** is any triangle with all sides of the same length.

A **scalene triangle** is any triangle with all sides of different lengths.

A **right triangle** is any triangle which contains a 90-degree angle.

An **acute triangle** is any triangle with all angles less than 90 degrees.

An **obtuse triangle** is any triangle with one angle greater than 90 degrees.

An **obtuse isosceles triangle** is both an isosceles triangle and an obtuse triangle.

A **right isosceles triangle** is both an isosceles triangle and a right triangle.

An **acute isosceles triangle** is both an isosceles triangle and an acute triangle.

A **right scalene triangle** is both a scalene triangle and a right triangle.

An **acute scalene triangle** is both a scalene triangle and an acute triangle.

An **obtuse scalene triangle** is both a scalene triangle and an obtuse triangle.

Determine the most specific description for a triangle given its specification.

Input

The first line will contain the number of data sets to process.

Each data set contains 6 integer numbers: A, M, B, N, C, and O; each separated by one or more spaces. A, B and C are the ordered lengths of the sides of a triangle; similarly, M, N and O are the ordered interior angles of the same triangle. The angle M is formed by the sides of length A and B.

Sample input:

```
4
3 90 4 37 5 53
10 60 10 60 10 60
11 50 10 60 10 70
20 110 10 60 30 10
```

Output

Each data set should produce one line of output containing the most specific description possible for the triangle.

Sample output:

```
right scalene triangle
equilateral triangle
acute isosceles triangle
obtuse scalene triangle
```