

code jam

```
System.out.println("hello, world!");
```

GCJ Beta 2008

A. Triangle Trilemma

[B. The Price is Wrong](#)
[C. Random Route](#)
[D. Hexagon Game](#)

Questions asked

Submissions

Triangle Trilemma

10pt No submissions
244/318 users correct
(77%)

10pt No submissions
200/260 users correct
(77%)

The Price is Wrong

15pt No submissions
110/175 users correct
(63%)

25pt No submissions
67/96 users correct
(70%)

Random Route

30pt No submissions
42/76 users correct
(55%)

30pt No submissions
38/51 users correct
(75%)

Hexagon Game

25pt No submissions
8/29 users correct
(28%)

45pt No submissions
6/15 users correct
(40%)

Top Scores

malcin	190
marek.cygan	190
SnapDragon	165

Practice Mode

[Sign out](#)

Triangle Trilemma

In the practice contest, you may try as many times as you want.

Small input
10 points


[Download A-small.in](#)

More options ▼

Submit

Large input
10 points


[Download A-large.in](#)

More options ▼

Submit

Problem

You're interested in writing a program to classify triangles. Triangles can be classified according to their internal angles. If one of the internal angles is exactly 90 degrees, then that triangle is known as a "right" triangle. If one of the internal angles is greater than 90 degrees, that triangle is known as an "obtuse" triangle. Otherwise, all the internal angles are less than 90 degrees and the triangle is known as an "acute" triangle.

Triangles can also be classified according to the relative lengths of their sides. In a "scalene" triangle, all three sides have different lengths. In an "isosceles" triangle, two of the sides are of equal length. (If all three sides have the same length, the triangle is known as an "equilateral" triangle, but you can ignore this case since there will be no equilateral triangles in the input data.)

Your program must determine, for each set of three points, whether or not those points form a triangle. If the three points are not distinct, or the three points are collinear, then those points do not form a valid triangle. (Another way is to calculate the area of the triangle; valid triangles must have non-zero area.) Otherwise, your program will classify the triangle as one of "acute", "obtuse", or "right", and one of "isosceles" or "scalene".

Input

The first line of input gives the number of cases, **N**. **N** test cases follow. Each case is a line formatted as

```
x1 y1 x2 y2 x3 y3
```

Output

For each test case, output one line containing "Case #x: " followed by one of these strings:

- isosceles acute triangle
- isosceles obtuse triangle
- isosceles right triangle
- scalene acute triangle

- scalene obtuse triangle
- scalene right triangle
- not a triangle

Limits

$1 \leq N \leq 100$,
 $x_1, y_1, x_2, y_2, x_3, y_3$ will be integers.

Small dataset

$0 \leq x_1, y_1, x_2, y_2, x_3, y_3 \leq 9$

Large dataset

$-1000 \leq x_1, y_1, x_2, y_2, x_3, y_3 \leq 1000$

Sample

Input	Output
8	Case #1: isosceles obtuse
0 0 0 4 1	triangle
2	Case #2: scalene acute
1 1 1 4 3	triangle
2	Case #3: isosceles acute
2 2 2 4 4	triangle
3	Case #4: scalene right
3 3 3 4 5	triangle
3	Case #5: scalene obtuse
4 4 4 5 5	triangle
6	Case #6: isosceles right
5 5 5 6 6	triangle
5	Case #7: not a triangle
6 6 6 7 6	Case #8: not a triangle
8	
7 7 7 7 7	
7	