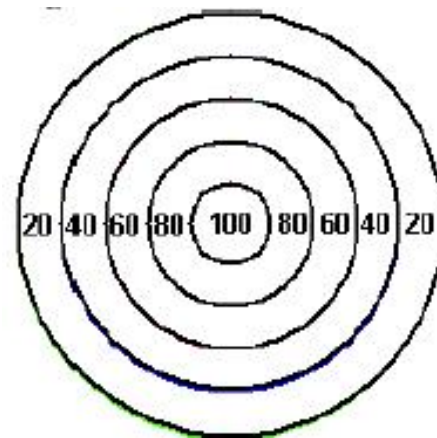


## 3142 Bullseye

A simple dartboard consists of a flat, circular piece of cork with concentric rings drawn on it. Darts are thrown at the board by players in an attempt to hit the center of the dartboard (the *Bullseye*). The region between each pair of rings (or the center and the first ring) represents a certain point value. The closer the region is to the center of the dartboard, the more points the region is worth, as shown in the diagram on the right:

Ring radii are at 3", 6", 9", 12" and 15" (the *Bullseye* has a diameter of 6"). A game of *Simple Darts* between two players is played as follows. The first player throws 3 darts at the board. A score is computed by adding up the point values of each region that a dart lands in. The darts are removed. The second player throws 3 darts at the board; the score for player two is computed the same way as it is for player one. The player with the higher score wins.



For this problem, you are to write a program that computes the scores for two players, and determine who, if anyone, wins the game. If a dart lands exactly on a ring (region boundary), the higher point value is awarded. Any dart outside the outer ring receives no points. For the purposes of this problem, you can assume that a dart has an infinitely fine point and can not land *partially* on a ring; it is either *on* the ring or it is *not on* the ring. Standard double precision floating point operations will be should be used.

### Input

Input consists of 1 or more datasets. A dataset is a line with 12 double-precision values separated by spaces. Each pair of values represents the  $X$  and  $Y$  distances respectively of a dart from the center of the board in inches. (the center is located at  $X = 0, Y = 0$ . The range of values are:  $-20.0 \leq X, Y \leq 20.0$ . Player one's darts are represented by the first 3 pairs of values, and player two's by the last 3 pairs of values. Input is terminated by the first value of a dataset being  $-100$ .

### Output

For each dataset, print a line of the form:

SCORE:  $N$  to  $M$ , PLAYER  $P$  WINS.

Or:

SCORE:  $N$  to  $M$ , TIE.

$N$  is player one's score, and  $M$  is player two's score.  $P$  is either 1 or 2 depending on which player wins. All values are non-negative integers.

### Formula

Recall:  $r^2 = x^2 + y^2$  where  $r$  is the radius, and  $(x, y)$  are the coordinates of a point on the circle.

**Sample Input**

```
-9 0 0 -4.5 -2 2 9 0 0 4.5 2 -2  
-19.0 19.0 0 0 0 0 3 3 6 6 12 12  
-100 0 0 0 0 0 0 0 0 0 0 0
```

**Sample Output**

```
SCORE: 240 to 240, TIE.  
SCORE: 200 to 140, PLAYER 1 WINS.
```