

11788 The League Will Be Decided Tomorrow!

We are at the last day of the national football league. Only one point separates Madrid and Barcelona in the classification! Both teams are drawing their respective matches. It is now 45th minute of the second half. CR9 steals the ball and starts a fast counterattack... dribbles all defenders... passes the goalkeeper... reaches the penalty point... shoots at empty net and...

And what?

You have to foresee if CR9 (i.e., footballisti**C Robot series 9**) will score a goal or not.

CR9 shoots the ball when it is at the penalty mark; hence, it is on the ground and at exactly 11 metres from the goal. We have taken precise measures of the shot: the horizontal angle is A degrees; the initial vertical angle is B degrees; and the initial speed of the ball is C metres/second.

You can assume that the ball is a perfect sphere of 11 cm of radius, and the goal is a rectangle of width 7.32 m, and height 2.44 m. Consider that the standard gravity on earth is 9.81 m/s^2 ; there is no air friction or spinning effect.

Let us consider the (ideal) trajectory of the centre of the ball, and the rectangle that represents the goal. We will foresee 'goal' if the trajectory passes through the rectangle, before the ball touches the ground. We will foresee 'out' if the trajectory never passes through the rectangle, for example, it passes above, left or right of the rectangle. In other case, we will foresee 'bounce'; that is, the trajectory could pass through the rectangle after bouncing in the ground (for some suitable *bouncing* coefficient).

Input

The input will contain several test cases.

For each test case, there is a line with three real numbers, A , B and C , separated by blank spaces, where:

- A is the horizontal angle in degrees. It will be 0 if CR9 shoots straight to the goal, and 180 is he shoots in the opposite direction.
- B is the initial vertical angle in degrees. It will be between 0 and 90, not inclusive.
- C is the initial speed of the ball, given in metres/second. It always be greater than 0.

These numbers will have no more than 3 decimal digits. The input will finish with a case where the three numbers are '0'.

Output

For each test case (except for the case with three zeros), the output should contain a single line with the text: 'goal', 'bounce' or 'out'.

Sample Input

```
-15.1 40 12.2
18 40 10
19 40 10
-8.76 8.50 30
5 22.25 18.55
```

Sample Output

```
goal  
bounce  
out  
goal  
out
```