# ASTU ICPC Club
## Prob:Hidden Circle

Ali loves difficult circle problems.  Whether training in the NASA Centrifuge for the astronaut corps, organizing his CD collection or building fancy clocks, nothing makes Ali happier than a circle problem!  However, Raymond has decided that he wants to challenge Ali for the circular crown given to the person who makes the most difficult circle problem.  Of course, Ali does not want to relinquish his crown.  He wants you to succeed in solving Raymond's challenge, which is stated below.  Don't let Ali down!

Given the radii of two tangent circles sitting on the ground, Ali wants you to determine the radius of the circle that is tangent to the two given circles and the ground as illustrated in the diagram below:
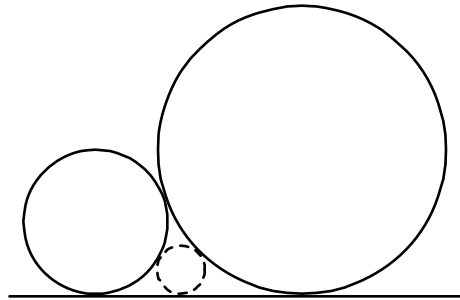


## The Problem:

Given the radii of the two large circles in the diagram above, determine the radius of the circle that would fit between them, tangent to each large circle and the ground.  If you need to use $\pi$, use a value of 3.1415926535.

## The Input:

Input will begin with a single, positive integer, $n$, on a line by itself, representing the number of circle problems to solve.  Each problem will be on a single line.  Each line will contain only two positive integers separated by a single space, $r$ ($r < 100$) and $s$ ($s < 100$), representing the radii of the two circles, respectively.

## The Output:

For each circle problem in the input, output a line with the following format:

`Circle Problem #k: Radius of the small circle = c`

where $k$ ($1 \leq k \leq n$) represents the number of circle problem and $c$ is the desired radius rounded to two decimal places.  For example, 3.454 would round to 3.45 while 3.455 would round to 3.46.

**Sample Input:**

```
3
1 1
1 2
19 88
```

**Sample Output:**

```
Circle Problem #1: Radius of the small circle = 0.25
Circle Problem #2: Radius of the small circle = 0.34
Circle Problem #3: Radius of the small circle = 8.86
```