Wizard on a Segway (Update 1)

Input File: Problem7.txt

A programming wizard escaped from Azkaban Cells. Unable to find a broom to fly away, and with a broken wand, he came across a two wheeler Segway. He tried hard to use the batteries but to no avail. Finally, he came up with an idea to use magic to rotate the two independent motors simultaneously and move away from dementors. His wand and magic cannot support the motors for long and the magic diminishes very quickly. During experiments, he found out that if he rotates both the motors equally, it goes straight. In case, one motor is rotated less than the other, Segway rotates in the direction of slow motor. Moreover, he also found out that the distance traveled is dependent on the diameter of the tire and something else which he called "connection". In one Segway he observed "connection" as if he rotates a motor 8 times (n), the wheel only rotates 1 time (m), while in another Segway this "connection" was different but always less than rotation of the motor.

You have to help the dementors by letting them know in which radius (in cm) around the cells, they should find the escaped wizard.

Sample Input:

First line contains the number of test cases (N). The next lines define the following: 1) Diameter of tires in cm 2) Value of "connection" defined as n:m 3) Rotation of left motor:Rotation of right motor.

Sample Output:

For each test case in the input, first output "Case #n: " where n is the test case number, followed by the radius in which the wizard can be found.

Sample input:

1

2

8:1

2000:2000

Sample output:

Case #1: 1571.428