

# Problem F: Medallion of Morgana

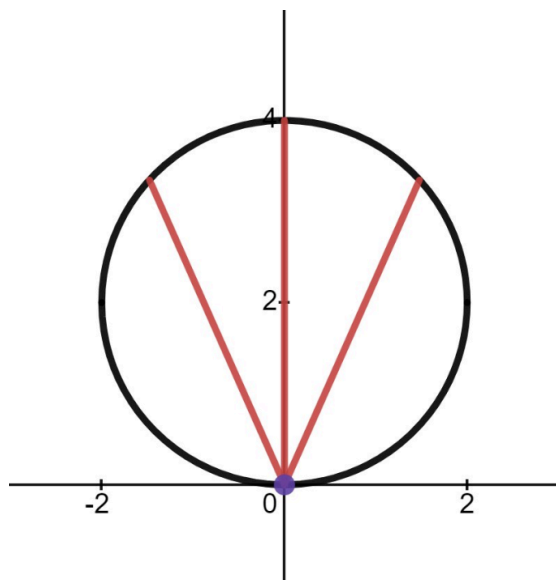
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Time Limit: 2 seconds

Travis recently came into possession of a peculiar artifact: The Medallion of Morgana. This artifact is rumored to have immense power as it was enchanted by the infamous Morgan Le Fay. Up to his usual malice, Travis plans to use the artifact to compose the most toxic problems he can. With this colossal power, he wants to ensure that no one has even a slight chance of stealing the medallion from him.

To prevent any attempts of thievery, he is going to lock the medallion in a circular room. He has arranged the room such that the medallion rests on a podium located next to the room's walls. Travis then sets up a laser security system to protect his precious relic.

This security system can be modeled in the coordinate plane. We will represent the room as a circle centered at  $(0, r)$  where  $r$  is the radius of the circle. The medallion's podium will be located at  $(0, 0)$  in the coordinate plane. The laser field will then be emitted from the podium. Laser fields are composed of  $n$  lasers that will partition the room into  $n+1$  sections. In order to increase the effectiveness of the field Travis wants to angle these lasers such that each section will have an equal area. The angle that Travis places lasers is measured counterclockwise from the positive x-axis and should be in the range  $[0^\circ, 180^\circ]$ .



For instance in the example above, we have a circular room with radius 2 centered at  $(0, 2)$ . If we have 3 lasers, we will partition this circle into 4 pieces, each with an area equal to roughly 3.14. To do this, lasers will be placed at angles approximately equal to  $66.17^\circ$ ,  $90.00^\circ$ , and  $113.83^\circ$ . Being preoccupied writing cursed problems, Travis has asked you to compute these angles.

## **Problem**

Given the radius of the room, and the number of lasers, compute the angles that Travis should place the lasers.

## **Input**

The first line of input will contain a single integer, **s**, which represents the number of security systems Travis is planning. The following **s** lines will each contain two integers, **n** and **r**, representing the number of lasers and the radius of the room.

## **Output**

For each security system, print out **n** lines containing the angle, in degrees, that a laser should be pointed. Angles should be outputted in ascending order. Any answer within an absolute or relative error of  $10^{-4}$  will be accepted.

Note: angles are measured counterclockwise from the positive x-axis and should be in the range  $[0^\circ, 180^\circ]$ .

## **Input Bounds and Corresponding Credit**

- $1 \leq s \leq 100$
- $1 \leq n \leq 100$
- $1 \leq r \leq 1000$

## **Samples**

Input	Output
2	74.6371
2 1	105.3629
3 2	66.1732
	90.0000
	113.8268