Radians Lab

Name: ________________________

INSTRUCTIONS: Using the first set of different size circles, cut your measuring device to the radius of the circle. Starting at the point where the radius connects with the circle, gently bend the device along the circumference of the circle, marking the end of the device. Connect the mark to the center of the circle.

1- What do you notice about the angle formed on each circle?

2- This measurement of angle is called a RADIAN. Why do you think, it would be called a radian?

INSTRUCTIONS: Now go to your second set of circles. (Please notice that circle #1 is the same size as one of your previous circles so you can use the same measuring device or create a new one.) Draw a horizontal line through the center of circle #1. Starting on the right side, gently bend the device along the circumference of the circle, marking the end of the device as you did before. Now continue around the circle by starting the device where the previous one stopped. Mark until you have gone around one time.

3- Approximately how many radians are in a semi-circle?

4- Approximately how many radians are in a complete circle?

5- What is the famous Greek letter and its value used to represent a special number related to circles?

6- Is this number close to your semi-circle number?

7- What is the formula for finding the circumference of a circle?

8- Is the number of radians in a complete circle close to the constant in this formula?

9- In terms of π, there are how many radians in a circle?

10- Therefore 1 revolution = _____ degrees = _______ radians and
½ revolution = _____ degrees = _____ radians.

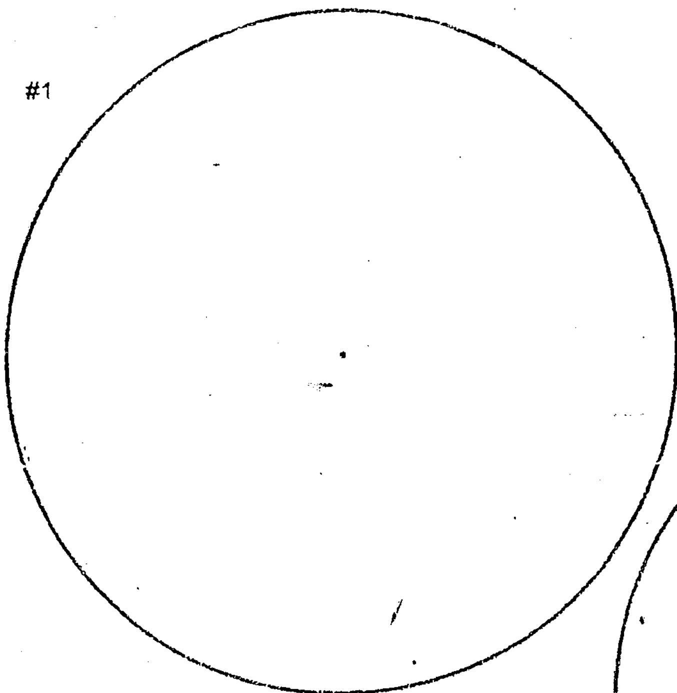
INSTRUCTIONS: Make a horizontal line through the center of circle #2. On the right intersection label it 0. On the left side intersection label it π. Divide the upper semicircle into 6 equal angles. If the semi-circle is π, then label each sixth appropriately (i.e. $\pi/6$). Can you reduce any of these? If so, do so. Now divide the lower half into 6 equal angles and continue the labeling process.

INSTRUCTIONS: Make a horizontal line through the center of circle #3. Label the ends as in the previous circle. Divide the upper semicircle into 4 equal angles labeling appropriately. Divide the lower half into 4 equal angles and continue the labeling process. Reduce fractions whenever possible.

Now complete the following table using circles 2 & 3 with the associated measure of the angle in degrees.

Rad	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	π	$\frac{7\pi}{6}$	$\frac{5\pi}{4}$	$\frac{4\pi}{3}$	$\frac{3\pi}{2}$	$\frac{5\pi}{3}$	$\frac{7\pi}{4}$	$\frac{11\pi}{6}$	2π
Deg																	

#1



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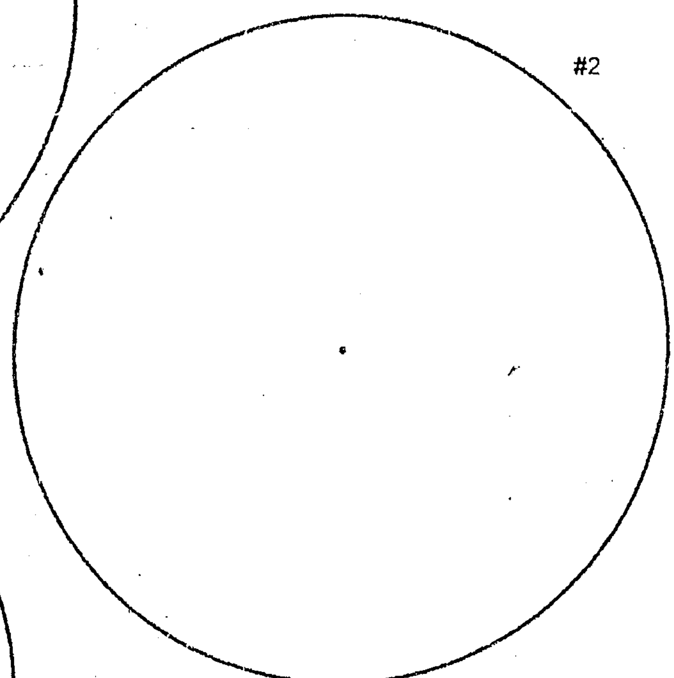

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