Lesson 8.6: Any Way You Slice It

In this lesson you will:

- learn how to find the area of a sector, a segment, and an annulus of a circle

In Lesson 8.5, you discovered a formula for calculating the area of a circle. With the help of your visual thinking and problem-solving skills, you can calculate the areas of different sections of a circle.

*Add "sector of a circle," "segment of a circle," and "annulus" to your vocabulary list.

If you cut a slice of pizza, each slice would probably be a sector of a circle. If you could make only one straight cut with your knife, your slice would be a segment of a circle. If you don't like the crust, you'd cut out the center of the pizza; the crust shape that would remain is called an annulus.

Sector of a circle

Segment of a circle

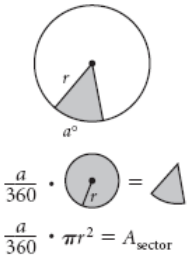
Annulus

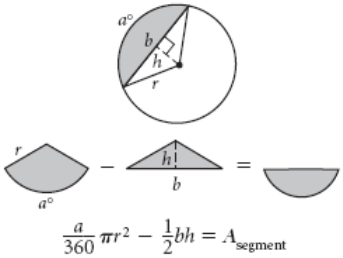
A **sector of a circle** is the region between two _____ and an _____ of a circle.

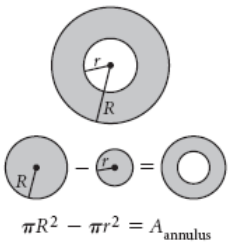
A **segment of a circle** is the region between a _____ and an _____ of a circle.

An **annulus** is the region between two _____ circles.

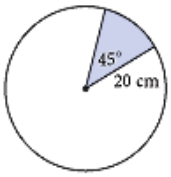
"Picture equations" are helpful when you try to visualize the areas of these regions. The picture equations below show you how to the find the area of a sector of a circle, the area of a segment of a circle, and the area of an annulus.



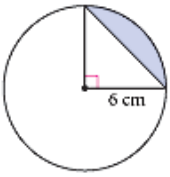




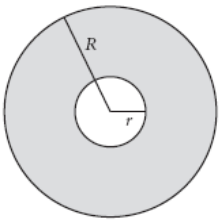
•Example 1: Find the area of the shaded sector.



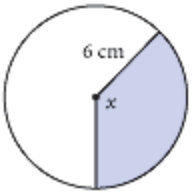
•Example 2: Find the area of the shaded segment.



•Example 3: Find the area of the annulus. R = 9 cm and r = 3 cm



•Example 4: The shaded area is 14π cm^2, and the radius is 6 cm. Find x.



⇒**ASSIGNMENT**: _____