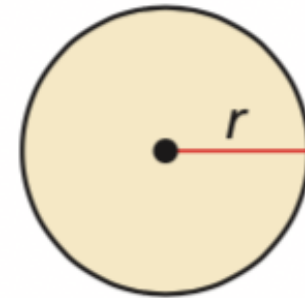# Chapter 11
Circumference, Area, and Volume

11.2 Areas of Circles and Sectors

Area

- **Circle**

$$Area = \pi r^2$$
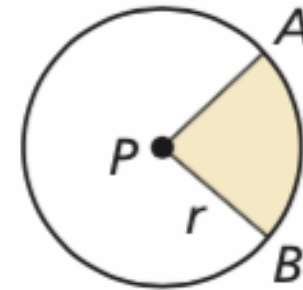

- **Example**

  A region with a 3-mile radius has a population density of about 6195 people per square mile. Find the number of people who live in the region.
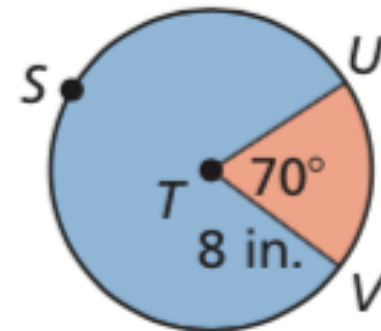
11.2 Areas of Circles and Sectors

Area

- **Sector** - A region inside a circle bounded by two radii and their intercepted arc.

    Area of sector APB = $\left(\dfrac{m\widehat{AB}}{360°} \right) \pi r^2$

- **Example**

    Find the area of the sectors formed by $\angle UTV$

11.2 Areas of Circles and Sectors

Real World

A rectangular wall has an entrance cut into it. You want to paint the wall. To the nearest square foot, what is the area of the region (green) you need to paint?