

$$C = 2\pi r$$

What You Will Learn

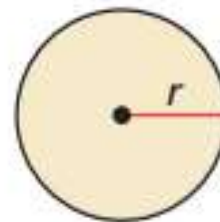
- ▶ Use the formula for the area of a circle. $A = \pi r^2$
- ▶ Find areas of sectors.
- ▶ Use areas of sectors.

Area of a Circle

The area of a circle is

$$A = \pi r^2$$

where r is the radius of the circle.



Find each indicated measure.

- a. area of a circle with a radius of 8.5 inches

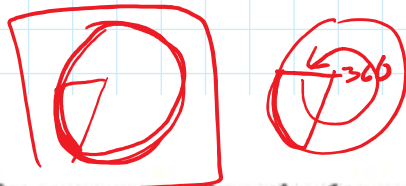
$$A = \pi r^2$$
$$\pi (8.5)^2$$
$$\pi (72.25)$$
$$A = 226.98 \text{ in}^2$$

- b. diameter of a circle with an area of 153.94 square feet

14 ft diameter

$$A = \pi r^2$$
$$\frac{153.94}{\pi} = \frac{\pi r^2}{\pi}$$
$$\sqrt{49} = \sqrt{r^2}$$
$$7 = r$$

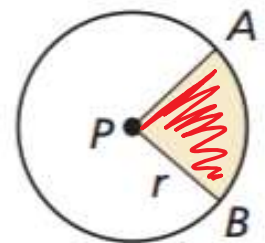
Area of a Sector



The ratio of the area of a sector of a circle to the area of the whole circle (πr^2) is equal to the ratio of the measure of the intercepted arc to 360° .

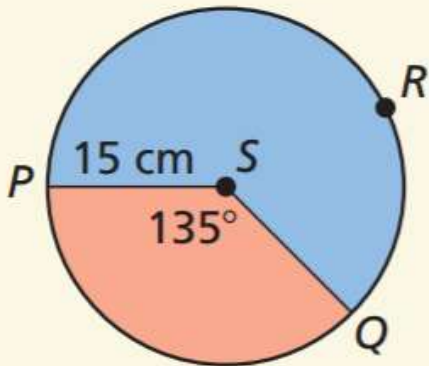
$$\frac{\text{Area of sector } APB}{\pi r^2} = \frac{m\widehat{AB}}{360^\circ}, \text{ or}$$

$$\text{Area of sector } APB = \frac{m\widehat{AB}}{360^\circ} \cdot \pi r^2$$



$$\frac{c}{C} = \frac{m\widehat{AB}}{360^\circ} = \frac{A_{APB}}{A_{\text{or}}}$$

Find the areas of the sectors formed by $\angle PSQ$.



$$A = \pi r^2$$

$$A = \pi 15^2$$

$$A = \pi 225$$

$$A = 706.86$$

Red Area

$$\frac{A_{PSQ}}{A_{OS}} = \frac{m \widehat{PQ}}{360^\circ}$$

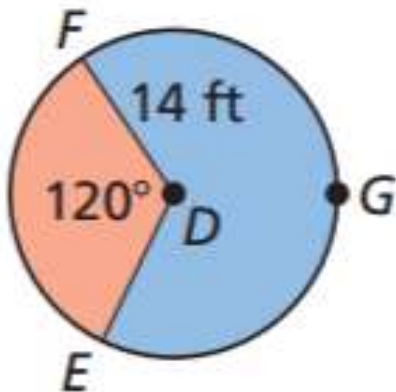
$$\frac{A}{706.86} = \frac{135^\circ}{360^\circ}$$

$$360A = (706.86)135$$

$$\frac{360A}{360} = \frac{95426.1}{360}$$

$$A = 265.1 \text{ cm}^2$$

Find the areas of the sectors formed by Angle(FDE)



Red Area

$$\frac{m \widehat{FE}}{360} = \frac{A}{\pi r^2}$$

$$\frac{120^\circ}{360^\circ} = \frac{A}{615.75 \text{ ft}^2}$$

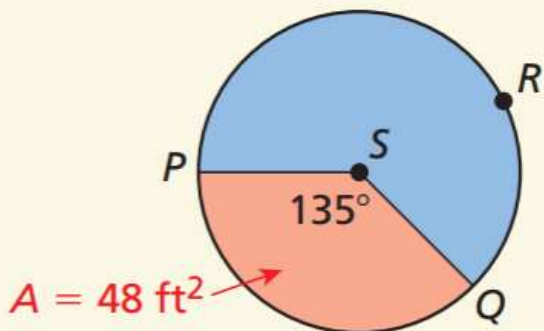
$$\frac{615.75 \text{ ft}^2}{3} = \frac{3A}{3}$$

$$A = 205.25 \text{ ft}^2$$

$$A_{00} = 615.75 \text{ ft}^2$$

$$\boxed{205.25 \text{ ft}^2 = A}$$

Find the area of $\odot S$.

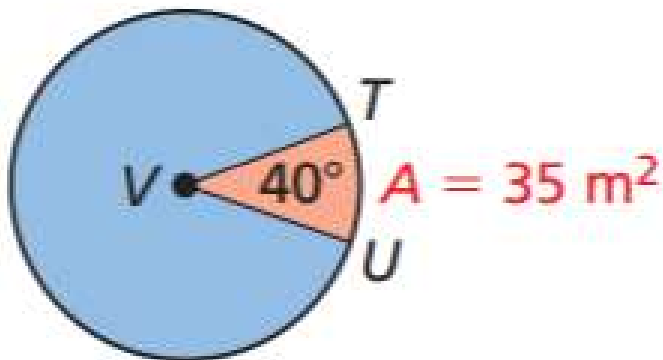


$$\frac{135^\circ}{360^\circ} = \frac{48 \text{ ft}^2}{A_{0s}}$$

$$135(A_{0s}) = 360(48 \text{ ft}^2)$$

$$\frac{135(A_{0s})}{135} = \frac{17280 \text{ ft}^2}{135}$$

$$\boxed{A_{0s} = 128 \text{ ft}^2}$$



$$\frac{m \widehat{TU}}{360} = \frac{35}{A_{0v}}$$

$$\frac{40^\circ}{360^\circ} = \frac{35 \text{ m}^2}{A}$$

$$360(35 \text{ m}^2) = 40A$$

$$\frac{1200_{\text{m}^2}}{40} = \frac{40A}{40}$$

$$315_{\text{m}^2} = A_{0V}$$

Practice sec 11.2 pg.

606: 1-10A,

15-22A
