

Lesson 11-3

Areas of Circles and Sectors



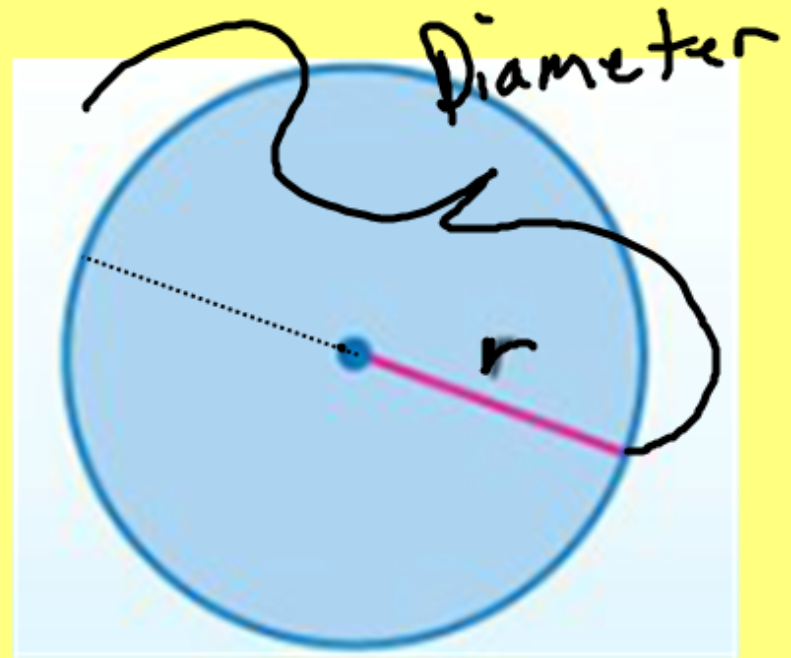
You will find the area of circles and sectors of circles.

You will be able to find the circumference of a circle.

Circumference of a circle

↳ distance around

$$C = 2\pi r \text{ or } \pi d$$



Find the circumference of a circle with a diameter of 6.2 cm. Round to the nearest tenth.

$$C = 2\pi r \text{ or } \pi d$$

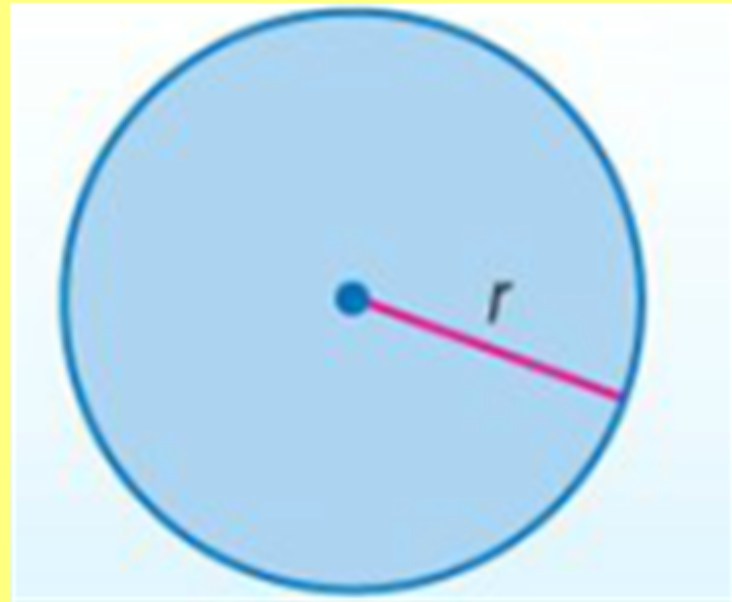
$$C = \pi (6.2)$$

$$C = 19.5 \text{ cm}$$



Area of a Circle

$$A = \pi r^2$$



An archery target has a radius of 12 inches.
What is the area of the target to the nearest
square inch?

$$A = \pi (12)^2$$

$$A = 144\pi$$

$$A = 452.4$$

$$A \approx 452 \text{ in}^2$$

The area of a circle is 196π square yards.
Find the diameter.

$$A = \pi r^2$$

$$\frac{196\cancel{\pi}}{\cancel{\pi}} = \frac{\cancel{\pi}r^2}{\cancel{\pi}}$$

$$196 = r^2$$

$$\sqrt{196} = r$$

$$14 = r$$

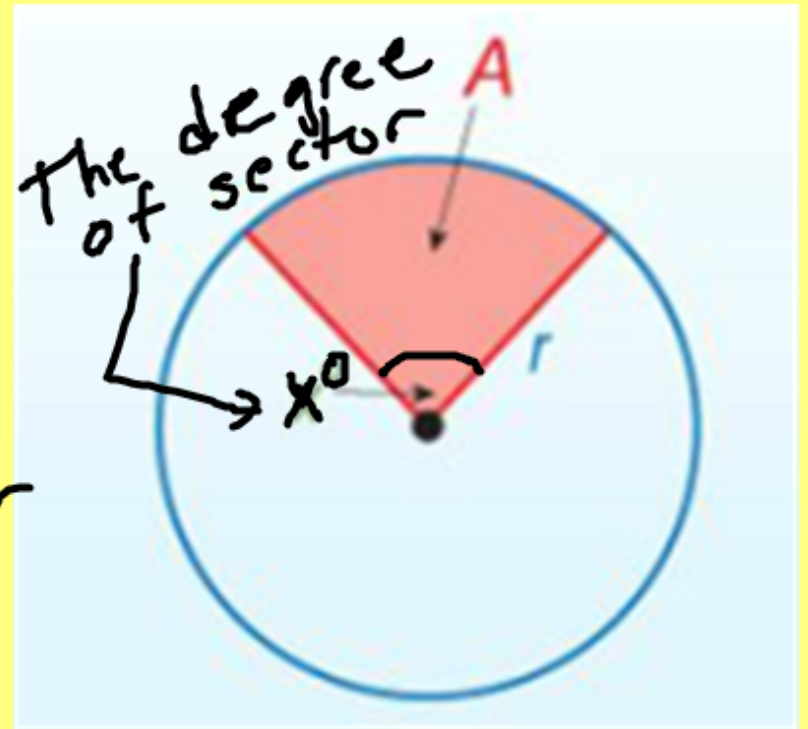
$$d = 28$$

Area of a sector

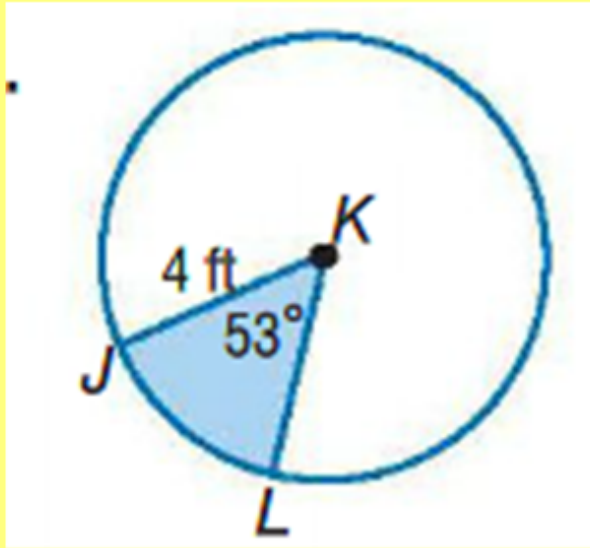
area of sector
↓
 A
↑
area of whole circle

$$\frac{A}{\pi r^2} = \frac{x}{360}$$

↳ a portion of circle
degree of sector



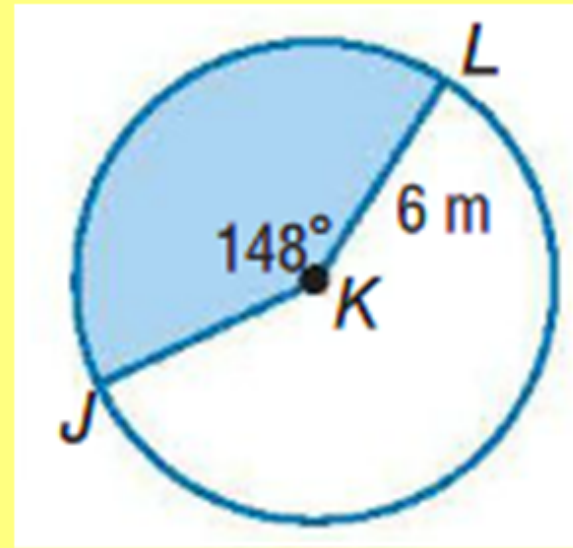
Find the area of each shaded sector



$$\frac{A}{16\pi} = \frac{53}{360}$$

$$A = \left(\frac{53}{360}\right) \cdot 16\pi$$

$$A = 7.4 \text{ ft}^2$$



$$\frac{A}{36\pi} = \frac{148}{360}$$

$$A = \left(\frac{148}{360}\right) \cdot 36\pi$$

$$A = 46.5 \text{ m}^2$$

PIE A pie has a diameter of 9 inches and is cut into 10 congruent slices. What is the area of one slice to the nearest hundredth?

$$\frac{A}{20.25\pi} = \frac{36}{360}$$

$(4.5)^2$

$$A = \left(\frac{36}{360} \right) \cdot 20.25\pi$$

$$A = 6.4 \text{ in}^2$$

