

**LESSON 11.5**

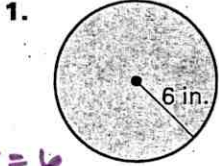
**Practice**

For use with pages 755-761

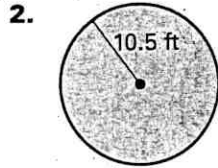
→ leave in terms of  $\pi$

$A = \pi r^2$

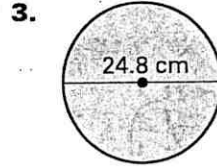
Find the **exact** area of the circle. Then find the area to the nearest hundredth.



$r = 6$   
 $A = \pi(6)^2$   
 $A = 36\pi \text{ in}^2$   
 $= 113.10 \text{ in}^2$



$r = 10.5$   
 $A = \pi(10.5)^2$   
 $A = 110.25\pi \text{ ft}^2$   
 $= 346.36 \text{ ft}^2$



$d = 24.8$   
 $r = 12.4$   
 $A = \pi(12.4)^2$   
 $A = 153.76\pi \text{ cm}^2$   
 $= 483.05 \text{ cm}^2$

Find the indicated measure.

4. The area of a circle is 173 square inches. Find the radius.

$A = 173 \text{ in}^2$   
 $A = \pi r^2$   
 $\frac{173}{\pi} = \frac{\pi r^2}{\pi} \rightarrow \sqrt{r^2} = \sqrt{\frac{173}{\pi}}$   
 $r = 7.42 \text{ in}$

5. The area of a circle is 290 square meters. Find the radius.

$A = 290 \text{ m}^2$   
 $A = \pi r^2$   
 $\frac{290}{\pi} = \frac{\pi r^2}{\pi} \rightarrow \sqrt{r^2} = \sqrt{\frac{290}{\pi}}$   
 $r = 9.61 \text{ m}$

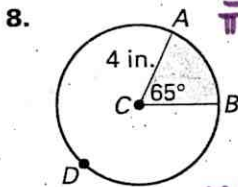
6. The area of a circle is 654 square centimeters. Find the diameter.

$A = 654 \text{ cm}^2$   
 $A = \pi r^2$   
 $\frac{654}{\pi} = \frac{\pi r^2}{\pi} \rightarrow \sqrt{r^2} = \sqrt{\frac{654}{\pi}}$   
 $r = 14.43$   
 $d = 2r \rightarrow d = 2(14.43)$

7. The area of a circle is 528 square feet. Find the diameter.

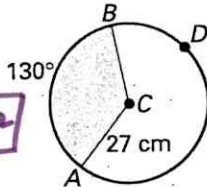
$A = 528 \text{ ft}^2$   
 $A = \pi r^2$   
 $\frac{528}{\pi} = \frac{\pi r^2}{\pi} \rightarrow \sqrt{r^2} = \sqrt{\frac{528}{\pi}}$   
 $r = 12.96$   
 $d = 2(12.96)$   
 $d = 25.93 \text{ ft}$

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



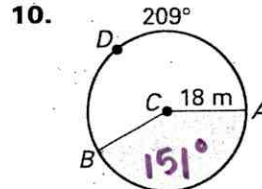
$\frac{x}{\pi(4)^2} = \frac{65}{360}$

$360x = 65(16\pi)$   
 $x = 9.08 \text{ in}^2$



$\frac{x}{\pi(27)^2} = \frac{130}{360}$

$360x = 130(729\pi)$   
 $x = 827.02 \text{ cm}^2$



$360 - 209 = 151$

$\frac{x}{\pi(18)^2} = \frac{151}{360}$

$360x = 151(324\pi)$   
 $x = 426.94 \text{ m}^2$

$\text{Area Sector} = \frac{\text{central } \angle}{360} \cdot \pi r^2$

$\pi r^2$



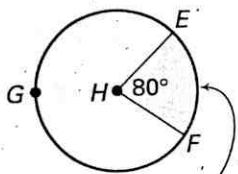
**LESSON 11.5**

**Practice** *continued*  
For use with pages 755-761

$$\frac{\text{Area Sector}}{A(\text{circle})} = \frac{\text{central } \angle}{360}$$

Use the diagram to find the indicated measure.

11. Find the area of  $\odot H$ .

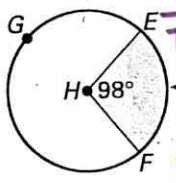


$$\frac{23.79}{x} = \frac{80}{360}$$

$$80x = 360(23.79)$$

$$A(\odot H) = 107.06 \text{ ft}^2$$

12. Find the radius of  $\odot H$ .



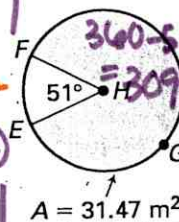
$$\frac{40.62}{\pi r^2} = \frac{98}{360}$$

$$98\pi r^2 = 360(40.62)$$

$$r^2 = 47.50$$

$$r = 6.89 \text{ in}$$

13. Find the diameter of  $\odot H$ .



$$\frac{31.47}{\pi r^2} = \frac{51}{360}$$

$$309\pi r^2 = 360(31.47)$$

$$r^2 = 11.67$$

$$r = 3.4$$

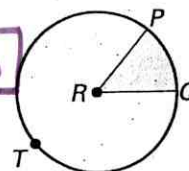
$$d = 2(3.4)$$

$$d = 6.8 \text{ m}$$

The area of  $\odot R$  is 295.52 square inches. The area of sector  $PRQ$  is 55 square inches. Find the indicated measure.

14. Radius of  $\odot R$   $A = \pi r^2$   
 $\frac{55}{295.52} = \frac{x}{295.52}$   
 $295.52 = \pi r^2$   
 $r = 9.7 \text{ in}$

15. Circumference of  $\odot R$   
 $C = 2\pi r$   
 $C = 2\pi(9.7)$   
 $C = 60.94 \text{ in}$



$$A(\odot R) = 295.52$$

$$A(\text{PRQ}) = 55$$

16.  $m\widehat{PQ}$   
 $\frac{55}{295.52} = \frac{x}{360}$   
 $m\widehat{PQ} = 67^\circ$

17. Length of  $\widehat{PQ}$   
 $\frac{x}{60.94} = \frac{67}{360}$   
 $x = 11.34 \text{ in}$

18. Perimeter of shaded region  
 $2r + \text{Arc Length}$   
 $2(9.7) + 11.34$   
 $= 30.74 \text{ in}$

19. Perimeter of unshaded region  
 $2r + (C - \text{Length of } \widehat{PQ})$   
 $2(9.7) + (60.94 - 11.34)$   
 $= 69.01 \text{ in}$

Find the area of the shaded region.

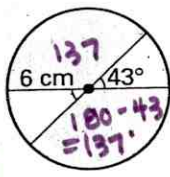
$$r = 12.5 \quad r = 9$$

$$A(\text{Big } \odot) - A(\text{small } \odot)$$

$$\pi(12.5)^2 - \pi(9)^2$$

$$A = 236.40 \text{ m}^2$$

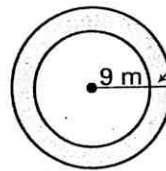
20.  $\frac{137 + 137}{274} = \frac{x}{360}$   
 $\frac{x}{\pi(6)^2} = \frac{274}{360}$   
 $x = 86.08 \text{ cm}^2$



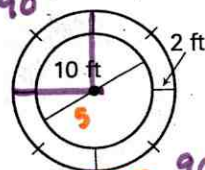
21.  $\frac{360}{8} = 45$   
 $3(45) = 135$   
 $\frac{x}{\pi(13)^2} = \frac{135}{360}$   
 $x = 199.11 \text{ in}^2$



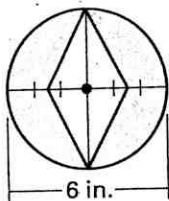
22.  $\pi(12.5)^2 - \pi(9)^2$   
 $A = 236.40 \text{ m}^2$



23.  $r = 7$   
 $r = 5$   
 $\frac{A(\text{Big } \odot)}{2} - \frac{A(\text{small } \odot)}{2}$   
 $= \frac{\pi(7)^2}{2} - \frac{\pi(5)^2}{2}$   
 $A = 37.7 \text{ ft}^2$



24.  $r = 3$   
 $d_1 = 6$   
 $d_2 = 3$   
 $A(\odot) - A(\text{Rhombus})$   
 $\pi(3)^2 - \frac{(4)(3)}{2}$   
 $A = 19.27 \text{ in}^2$



25.  $r = 8$   
 $A(\odot) - A(\Delta)$   
 $\pi(8)^2 - \frac{(8\sqrt{3})(12)}{2}$   
 $A = 117.97 \text{ cm}^2$

