

AK

Name: \_\_\_\_\_

Period: \_\_\_\_\_

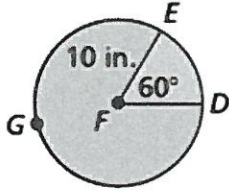
11.3 Practice Problems

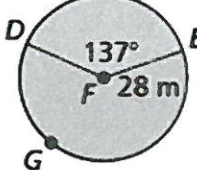
Find the indicated measure.

- area of a circle with a radius of 5 inches  $25\pi$
- area of a circle with a diameter of 16 feet  $64\pi$
- radius of a circle with an area of 89 square feet  $89 = \pi r^2 \rightarrow r^2 = \frac{89}{\pi} \rightarrow r = 5.3$
- radius of a circle with an area of 380 square inches  $380 = \pi r^2 \rightarrow r = 11$
- diameter of a circle with an area of 12.6 square inches  $12.6 = \pi r^2 \rightarrow r = 2$
- diameter of a circle with an area of  $676\pi$  square centimeters  $r^2 = 676$   
 $r = 26$   $d = 52$

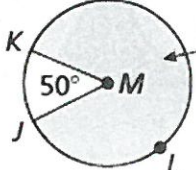
- About 210,000 people live in a region with a 12-mile radius. Find the population density in people per square mile.  
Area =  $144\pi$   
Pop Dens =  $\frac{210,000}{144\pi} = \frac{210,000}{452.16} = 464$  ppm  
 $\hookrightarrow \frac{\text{Pop}}{\text{Area}}$
- About 650,000 people live in a region with a 6-mile radius. Find the population density in people per square mile.  
Area =  $36\pi$   
Pop Dens =  $\frac{650,000}{36\pi} = 5750$  ppm

Find the area of each sector

9.   $\frac{60}{360} \cdot \pi (10)^2$   
 $\frac{1}{6} \cdot 100\pi$   
 $\frac{100\pi}{6} = \frac{50\pi}{3}$

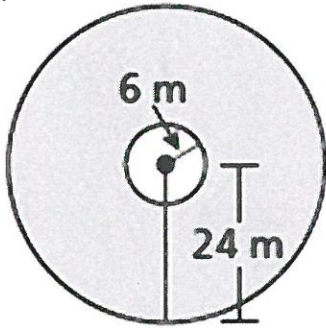
10.   $\frac{137}{360} \cdot \pi 28^2$   
 $= 936.8$

11. Find the area of  $\odot M$

  $A = 56.87 \text{ cm}^2$   
 $\frac{50}{360} \cdot \pi r^2 = 56.87$   
 $\pi r^2 = 409.5$

Find the area of each shaded region.

12.

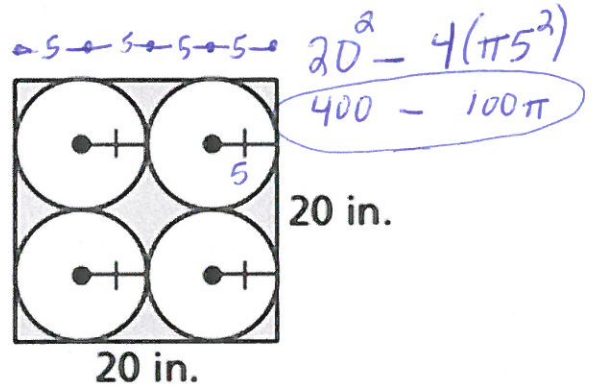


$$24^2 \pi - 6^2 \pi$$

$$576\pi - 36\pi$$

$$540\pi$$

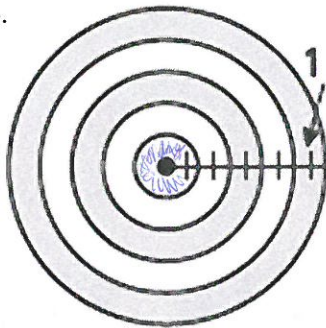
13.



$$20^2 - 4(\pi 5^2)$$

$$400 - 100\pi$$

14.

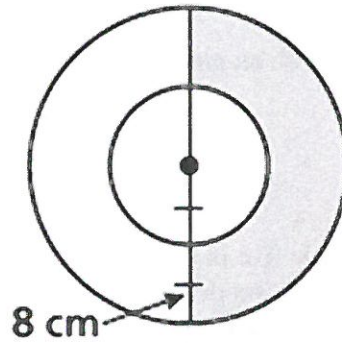


$$5^2 \pi - 4^2 \pi + 3^2 \pi - 2^2 \pi + 1^2 \pi$$

$$25\pi - 16\pi + 9\pi - 4\pi + \pi$$

$$15\pi$$

15.



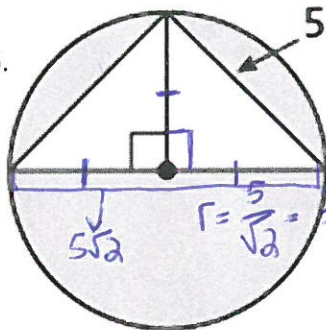
$$180^\circ$$

$$\frac{1}{2}(16^2 \pi - 8^2 \pi)$$

$$\frac{1}{2}(256\pi - 64\pi)$$

$$\frac{1}{2} \cdot 192\pi = 96\pi$$

16.



$$5 \text{ in.} = \sqrt{2}r$$

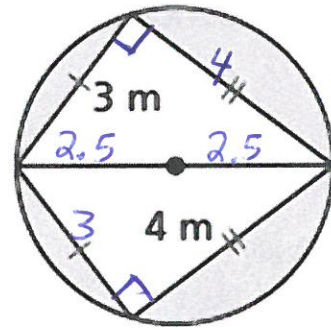
$$\pi \left(\frac{5}{\sqrt{2}}\right)^2 - \frac{1}{2}(5\sqrt{2})\frac{5\sqrt{2}}{2}$$

$$\pi \left(\frac{25}{2}\right) - \frac{1}{2}\left(\frac{50}{2}\right)$$

$$\frac{25\pi}{2} - \frac{50}{4}$$

$$\frac{50\pi - 50}{4}$$

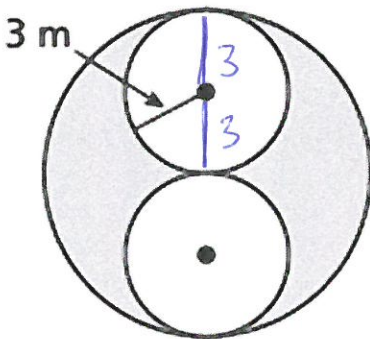
17.



$$\pi(2.5)^2 - 2\left(\frac{1}{2} \cdot 3 \cdot 4\right)$$

$$6.25\pi - 12$$

18.

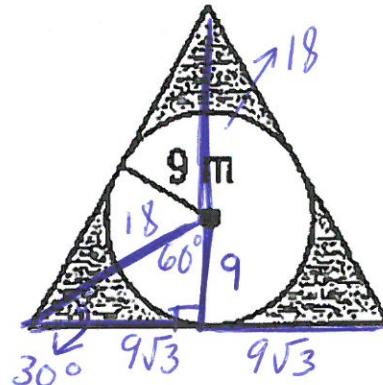


$$\pi 6^2 - 2\pi 3^2$$

$$36\pi - 18\pi$$

$$18\pi$$

19.



$$h = 27$$

$$b = 18\sqrt{3}$$

$$\frac{18\sqrt{3} \cdot 27}{2} - \pi 9^2 = 243\sqrt{3} - 81\pi$$