NAME Key DATE _____ SCORE _____

Arc Lengths and Areas of Sectors

For use after Section 11–6

In Exercises 1–12 answers may be left in terms of π.

1. In circle O with radius 8, $m\angle AOB = 45$. Find the length of $\overset{\frown}{AB}$ and the area of sector AOB.

   length of $\overset{\frown}{AB}$ = 2π, A = 8π

2. In circle O with a diameter 14, $m\angle COD = 120$. Find the length of $\overset{\frown}{CD}$ and the area of sector COD.

   length of $\overset{\frown}{CD}$ = $\frac{14\pi}{3}$, A = $\frac{49\pi}{3}$

3. In circle O with radius 12, $m\angle GOH = 30$. Find the length of $\overset{\frown}{GH}$ and the area of sector GOH.

   length of $\overset{\frown}{GH}$ = 2π, A = 12π

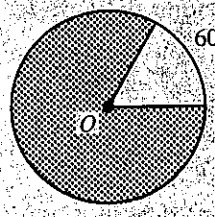
4. In circle O with diameter 20, $m\angle EOF = 72$. Find the length of $\overset{\frown}{EF}$ and the area of sector EOF.

   length of $\overset{\frown}{EF}$ = 4π, A = 20π

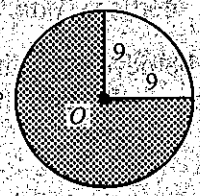
5. The area of sector AOB is 20π and $m\angle AOB = 100$. Find the radius of circle O. $6\sqrt{2}$

6. The length of $\overset{\frown}{CD}$ is 4.2π and $m\angle COD = 70$. Find the radius of circle O. 10.8

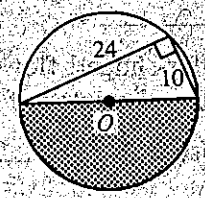
Find the area of each shaded region. Point O marks the center of a circle.

7. 

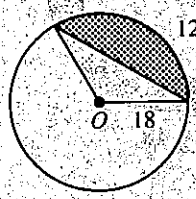
   A = $\frac{245\pi}{6}$

8. 

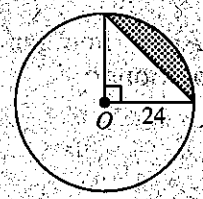
   A = $\frac{243\pi}{4}$

9. 

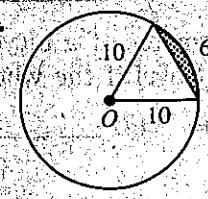
   A = $\frac{169\pi}{2}$

10. 

    A = $108\pi - 81\sqrt{3}$

11. 

    A = $144\pi - 288$

12. 

    A = $\frac{50\pi}{3} - 25\sqrt{3}$