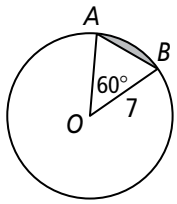
Name _____ Class _____ Date _____

Practice

Form G

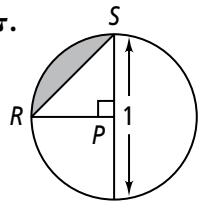
Areas of Circles and Sectors

Find the area of each of the following. Leave your answer in terms of π.



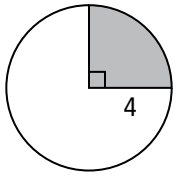
1. $\odot O$ 49π
2. $\triangle AOB$ 21.2
3. sector AOB $\frac{49}{6}\pi$
4. the shaded segment $\frac{49}{6}\pi - 21.2$

Find the area of each of the following. Leave your answer in terms of π.

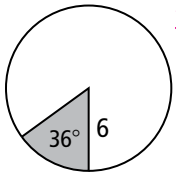


5. $\odot P$ $\frac{1}{4}\pi$ or $\frac{\pi}{4}$
6. $\triangle RPS$ $\frac{1}{8}$
7. sector RPS $\frac{1}{16}\pi$ or $\frac{\pi}{16}$
8. the shaded segment $\frac{\pi}{16} - \frac{1}{8}$

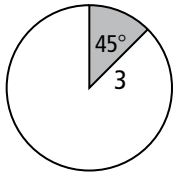
Find the area of each shaded sector of a circle. Leave your answer in terms of π.

9. 

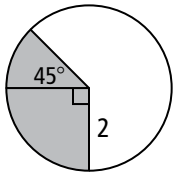
4π

10. 

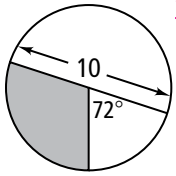
$\frac{18}{5}\pi$

11. 

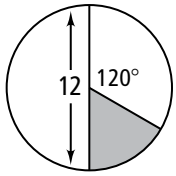
$\frac{9}{8}\pi$

12. 

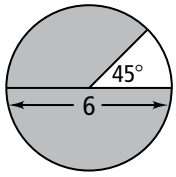
$\frac{3}{2}\pi$

13. 

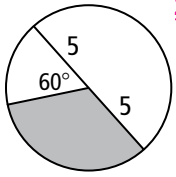
$\frac{15}{2}\pi$

14. 

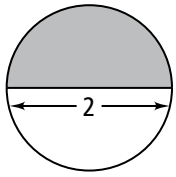
6π

15. 

$\frac{63}{8}\pi$

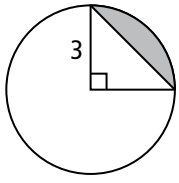
16. 

$\frac{25}{3}\pi$

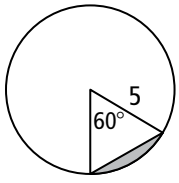
17. 

$\frac{\pi}{2}$

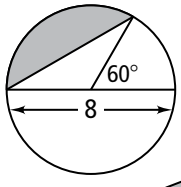
Find the area of each shaded segment. Round your answer to the nearest tenth.

18. 

2.6

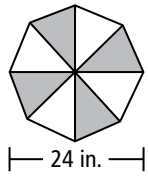
19. 

2.3

20. 

9.8

21. The table in the figure at the right is 24 in. across. The shaded regions are made of mahogany. What is the area of the mahogany? Round your answer to the nearest tenth. 203.6 in.^{2}



Name _____ Class _____ Date _____

Practice (continued) *Form G*

Areas of Circles and Sectors

Find the area of sector *RST* in $\odot S$ using the given information. Leave your answer in terms of π.

22. $r = 3$ in., $m\overset{\frown}{RT} = 30$ $\frac{3}{4}\pi$ in.^{2}

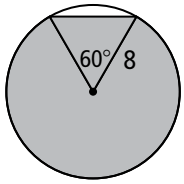
23. $r = 8$ mm, $m\overset{\frown}{RT} = 90$ 16π mm^2

24. $d = 10$ ft, $m\overset{\frown}{TR} = 180$ $\frac{25}{2}\pi$ ft^2

25. $d = 13$ m, $m\overset{\frown}{TR} = 120$ $\frac{169}{12}\pi$ m^2

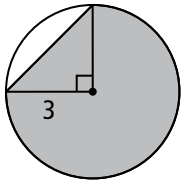
Find the area of the shaded region. Leave your answer in terms of π and in simplest radical form.

26.



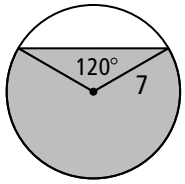
$\frac{160}{3}\pi + 16\sqrt{3}$

27.



$\frac{27}{4}\pi + \frac{9}{2}$

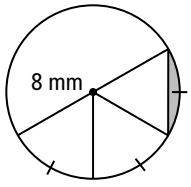
28.



$\frac{98}{3}\pi + \frac{49}{4}\sqrt{3}$

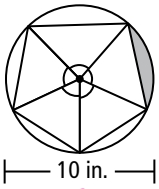
Find the area of each shaded segment. Round your answer to the nearest tenth.

29.



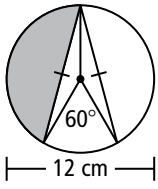
1.4 mm^2

30.



3.8 in.^{2}

31.



38.1 cm^2

32. Draw a Diagram Draw a circle and a sector so that the area of the sector is three-tenths of the area of the circle. Give the radius of the circle, the measure of the arc, and area of the sector.

Check students' work. Sample: radius = 2; $m\overset{\frown}{AC} = 108$; area of sector $\frac{6}{5}\pi$

33. Reasoning If $\overset{\frown}{AC} \cong \overset{\frown}{DF}$ and Area of sector *ABC* = Area of sector *DEF*, is $\odot B \cong \odot E$? Explain.

Answers may vary. Sample: Yes; the two circles are congruent because $\frac{m\overset{\frown}{AC} \cdot \pi \cdot r_1^2}{360} = \frac{m\overset{\frown}{DF} \cdot \pi \cdot r_2^2}{360}$, so $r_1 = r_2$.

34. In a circle, a 60° sector has area 25π ft^2. What is the circumference of the circle? Leave your answer in terms of π and in simplest radical form.

$10\sqrt{6}\pi$ ft