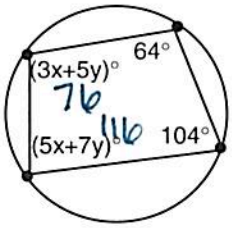
Name Key

PreAP Geometry
Chapter 12-13 Test review

Date _____ Period _____

Figures are not drawn to scale. Exact answers or round to 3 decimal places unless specified otherwise.

1. Find x and y.



$-5(3x+5y=76) \rightarrow -15x-25y=-380$

$3(5x+7y=116) \rightarrow 15x+21y=348$

$-4y=-32$

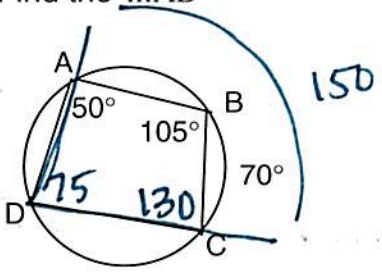
$y=8$

$3x+5(8)=76$

$3x=36$

$x=12$

2. Find the $\overset{\frown}{mAB}$



150

$150-70=80^\circ$

3. If the area of the segment is $25\pi - 50$ square inches, what is the length of the radius of circle O?

90° angle

$\frac{1}{4}\cdot \pi r^2 = 25\pi \cdot 4$

$\pi r^2 = 100\pi$

$r^2 = 100$

$r=10$

4. If the area of the segment is $\pi - 2$ square inches, what is the length of the radius of circle O?

90° angle

$\frac{1}{4}\pi r^2 = \pi \cdot 4$

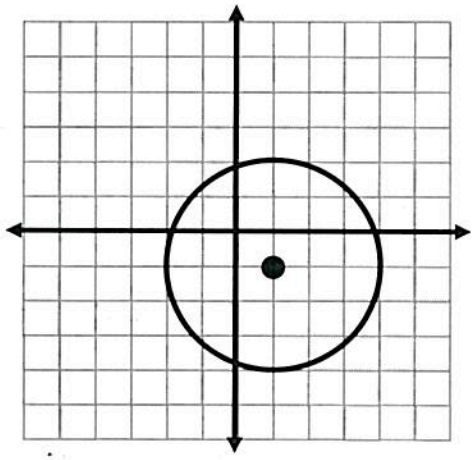
$\pi r^2 = 4\pi$

$r^2 = 4$

$r=2$

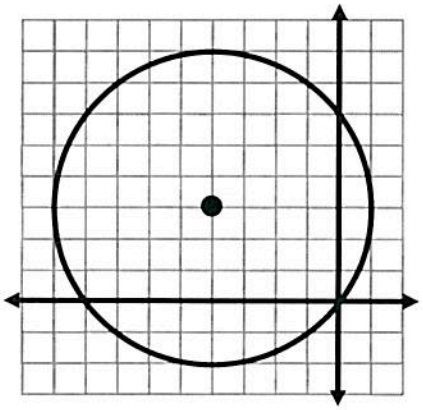
Write the equation of the following circles:

5.



Equation: $(x-1)^2+(y+1)^2=9$

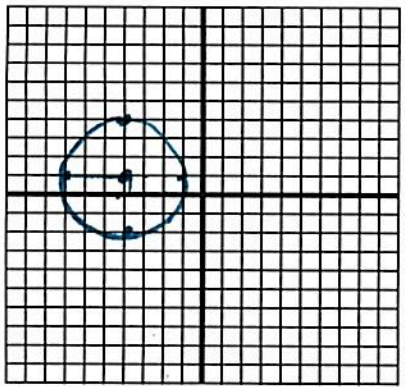
6.



Equation: $(x+4)^2+(y-3)^2=25$

For 7 and 8, Graph the following equations and find the radius and center.

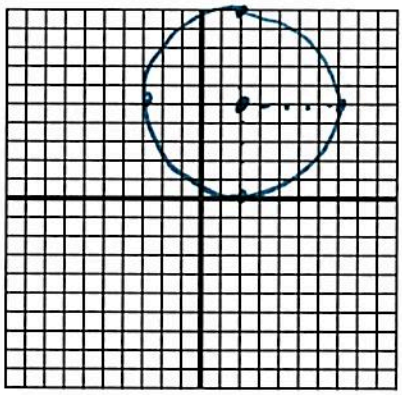
7. $(x+4)^2+(y-1)^2=9$



Radius: 3

Center: $(-4,1)$

8. $(x-2)^2+(y-5)^2=25$



Radius: 5

Center: $(2,5)$

For 9, complete the square and find the center and radius of each circle.

9. $x^2+y^2-4x+10y+20=0$

$-20 \quad -20$

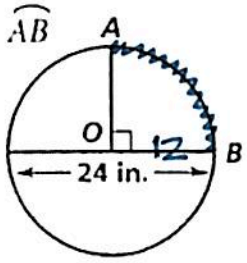
$(x^2-4x+4)+(y^2+10y+25)=-20+4+25$

$(x-2)^2+(y+5)^2=9$

$C=(2,-5) \quad r=3$

Find the length of each arc. Leave your answers in terms of π.

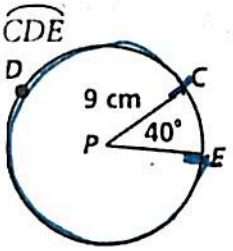
10. $\overset{\frown}{AB}$



$\frac{1}{4} \cdot 2\pi(12) = \frac{1}{4} 24\pi =$

$\boxed{6\pi}$

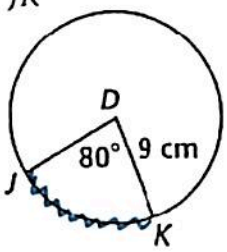
11. $\overset{\frown}{CDE}$



$\frac{320}{360} \cdot 2\pi 9$

$\frac{8}{9} \cdot 18\pi = \boxed{16\pi}$

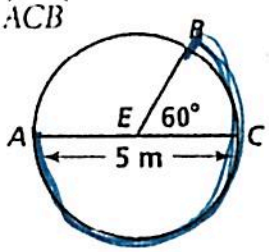
12. $\overset{\frown}{JK}$



$\frac{80}{360} \cdot 2\pi 9$

$\frac{2}{9} \cdot 18\pi = \boxed{4\pi}$

13. $\overset{\frown}{ACB}$



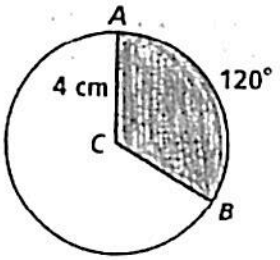
$\frac{240}{360} \cdot 2\pi(2.5)$

$\frac{2}{3} \cdot 5\pi$

$\boxed{\frac{10\pi}{3}}$

Find the area of the shaded sector. Leave your answers in terms of π.

14.

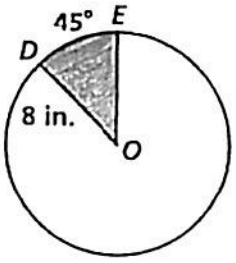


$\frac{120}{360} \cdot \pi(4)^2$

$\frac{1}{3} \cdot 16\pi$

$\boxed{\frac{16\pi}{3}}$

15.



$\frac{45}{360} \cdot \pi 8^2$

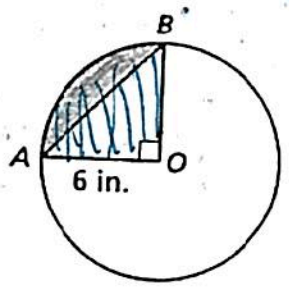
$\frac{1}{8} \cdot 64\pi =$

$\boxed{8\pi}$

Find the area of the shaded segment of each circle. Leave your answers in terms of π.

$A_{sector} - A_{\Delta} = A_{segment}$

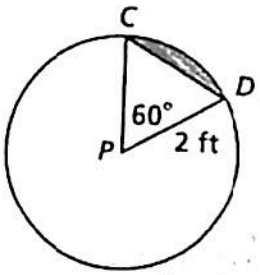
16.



$\frac{1}{4} \cdot \pi(6)^2 - \frac{6 \cdot 6}{2}$

$9\pi - 18$

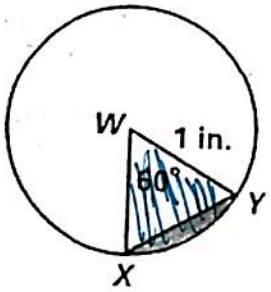
17.



$\frac{1}{6} \cdot \pi(2)^2 - \frac{2^2\sqrt{3}}{4}$

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

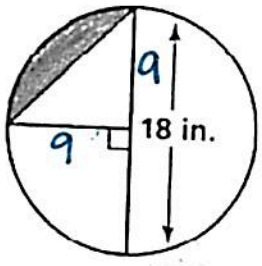
18.



$\frac{1}{6} \cdot \pi(1)^2 - \frac{1\sqrt{3}}{4}$

$\frac{\pi}{6} - \frac{\sqrt{3}}{4}$

19.



$\frac{1}{4}\pi(9)^2 - \frac{9 \cdot 9}{2}$

$\frac{81\pi}{4} - \frac{81}{2}$

Convert the radians to a degree measure and the degrees to a radian measure.

20. $2\pi / 3 =$ $120°$

$\frac{2\pi}{3} \cdot \frac{180}{\pi} = \frac{360}{3}$

21. $395^0 =$

$395 \cdot \frac{\pi}{180} = \frac{395\pi}{180} = \frac{79\pi}{36}$