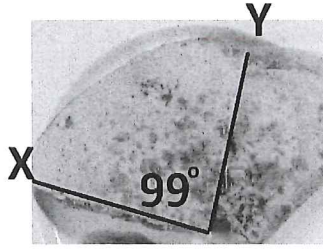


Name: _____

Answer Key

ACC 10.1-10.4 Spiral Assignment

1. The figure represents a quesadilla with a ~~radius~~ diameter of 14 inches. Find the exact arc length of \widehat{XY}



$$s = \frac{\theta}{360} \cdot C \quad d=14 \quad \theta=99^\circ$$

$$s = \frac{99}{360} 14\pi = \frac{1386\pi}{360}$$

$$s = \frac{77\pi}{20} \text{ inches}$$

2. **Check Your Progress** The diameters of $\odot D$, $\odot B$, and $\odot A$ are 5 inches, 9 inches, and 18 inches respectively.

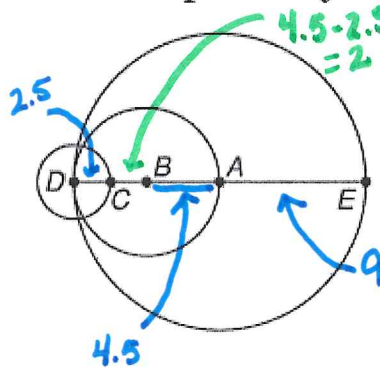
- $\odot D$ $d = 5$ in
- $\odot B$ $d = 9$ in
- $\odot A$ $d = 18$ in

a. Find AC.

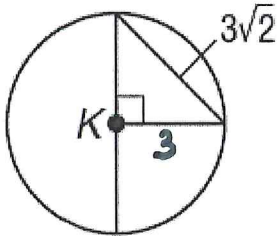
$$AC = 9 - 2.5 = 6.5 \text{ in}$$

b. Find EB.

$$EB = 4.5 + 9 = 13.5 \text{ in}$$



3. Find the exact circumference of circle K.



Find the radius
 * 45° 45° 90° b/c all radii are \cong
 $r = 3$

$$C = 2\pi r$$

$$C = 2\pi 3$$

$$C = 6\pi \text{ units}$$

Check Your Progress Find the indicated measure for each circle. (use exact and rounded values)

4. a. Find C if $d = 3$ feet.

$$C = 3\pi f + \quad C \approx 9.42 f +$$

b. Find d and r to the nearest hundredth if $C = 16.8$ meters.

$$\frac{16.8}{\pi} = \frac{d\pi}{\pi} \quad d \approx 5.3m \quad r \approx 2.7m$$

5. Find the measures of:

$$8x - 4 + 13x - 3 + 5x + 5 = 180$$

$$26x - 2 = 180$$

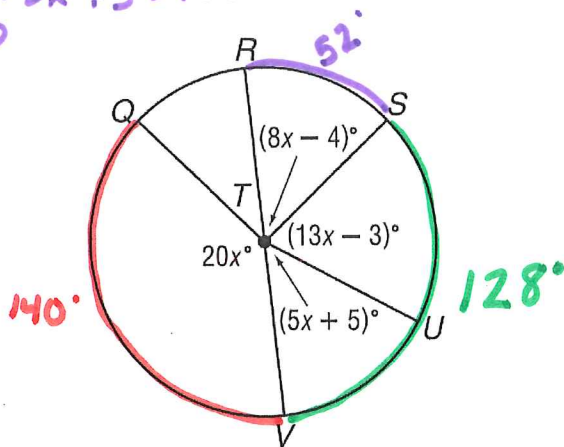
$$x = 7$$

a.) $\angle RTS = 52^\circ$

b.) $\angle STV = 180 - 52 = 128^\circ$

c.) $m\widehat{QV} = 20 \cdot 7 = 140^\circ$

d.) $m\widehat{SVQ} = 140 + 128 = 268^\circ$

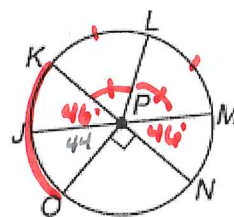


6. In $\odot P$, $m\angle NPM = 46$, \overline{PL} bisects $\angle KPM$, and $\overline{OP} \perp \overline{KN}$.

a. Find $m\widehat{OK} = 44^\circ$

b. Find $m\widehat{LM} = 180 - 46 = 134$
 $134 \div 2 = 67$
 $m\widehat{LM} = 67^\circ$

c. $m\widehat{JKO} = 360 - 44 = 316^\circ$

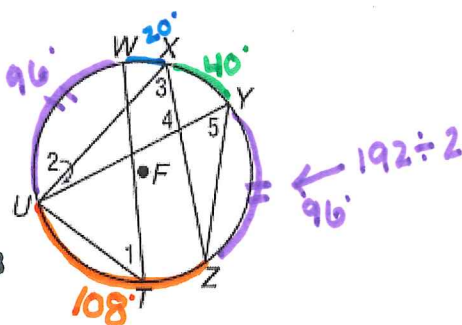


7. In $\odot F$, $m\widehat{WX} = 20$, $m\widehat{XY} = 40$, $m\widehat{UZ} = 108$, and $m\widehat{UW} = m\widehat{YZ}$. Find the measures of the numbered angles.

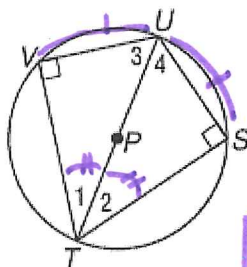
$\angle 1 = \frac{1}{2} 96 = 48^\circ$ $\angle 4 = 180 - \angle 2 - \angle 3 = 106^\circ$

$\angle 2 = \frac{1}{2} 40 = 20^\circ$

$\angle 3 = \frac{1}{2} 108 = 54^\circ$ $\angle 5 = \frac{1}{2} 108 = 54^\circ$



8. ALGEBRA Triangles TVU and TSU are inscribed in $\odot P$ with $\widehat{VU} \cong \widehat{SU}$. Find the measure of each numbered angle if $m\angle 2 = x + 9$ and $m\angle 4 = 2x + 6$.



$\angle 2 \cong \angle 1$
 $\angle 1 = \angle 2 = 34^\circ$

$\therefore \angle 3 \cong \angle 4$
 $\angle 3 = \angle 4 = 56^\circ$

$90 + \angle 2 + \angle 4 = 180$ Δ sum

$90 + x + 9 + 2x + 6 = 180$

$3x + 105 = 180$

$x = 25$

9. Quadrilateral $QRST$ is inscribed in $\odot M$. If $m\angle Q = 87$ and $m\angle R = 102$, find $m\angle S$ and $m\angle T$.

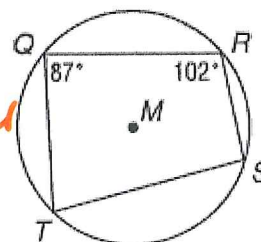
Opposite \angle s in an inscribed quadrilateral are suppl.

$\angle T = 180 - 102$

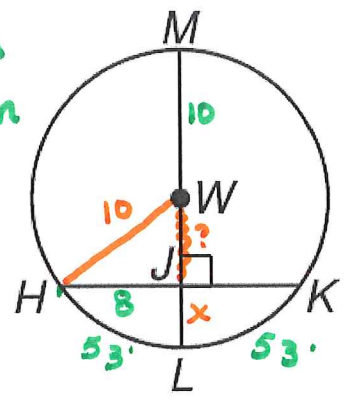
$\angle T = 78^\circ$

$\angle S = 180 - 87$

$\angle S = 93^\circ$



10. Circle W has a radius of 10 centimeters. $r = 10\text{ cm}$
 Radius \overline{WL} is perpendicular to chord \overline{HK} , which is 16 centimeters long. $HK = 16\text{ cm}$

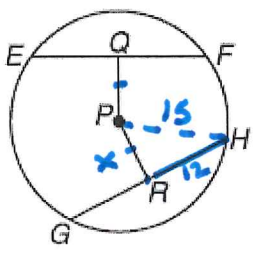


a. If $m\widehat{HL} = 53$, find $m\widehat{MK}$.

$m\widehat{MK} = 180 - 53$ $m\widehat{MK} = 127$

b. Find JL . $8^2 + y^2 = 10^2$ $\therefore WJ = 6\text{ cm}$
 $y^2 = 36$ so $JL = 10 - 6$
 $y = 6$ $JL = 4\text{ cm}$

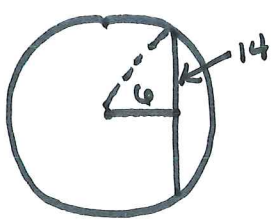
11. Chords \overline{EF} and \overline{GH} are equidistant from the center. If the radius of $\odot P$ is 15 and $EF = 24$, find PR and RH .



$RH = 12$
 $x^2 + 12^2 = 15^2$
 $x^2 = 81$
 $x = 9$

$RH = 12\text{ units}$
 $PR = 9\text{ units}$

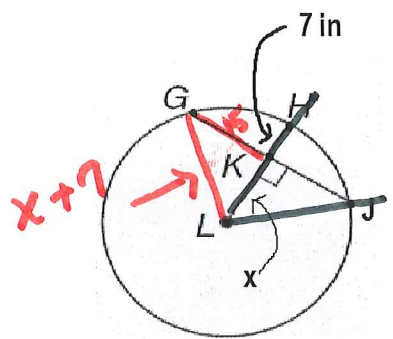
12. Find the radius of a circle if a $\overset{28}{\textcircled{27}}$ foot chord is 6 feet from the center of the circle.



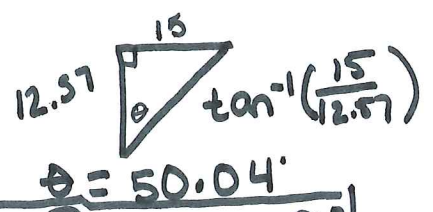
$6^2 + 14^2 = r^2$
 $232 = r^2$
 $\sqrt{232} = r$

radius
 $= 2\sqrt{58}\text{ ft}$
 $\approx 15.23\text{ ft}$

13. In circle K, JG is 30 inches. Find the distance of KL . Then find $m\widehat{GJ}$
exact values

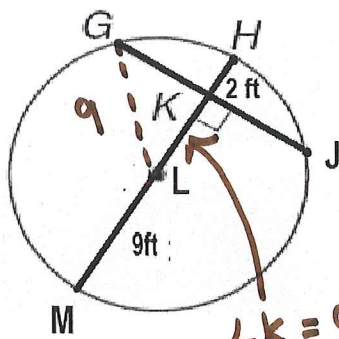


$15^2 + x^2 = (x+7)^2$ $(x+7)(x+7)$
 $225 + x^2 = x^2 + 14x + 49$
 -49 $-x^2$ $-x^2$ -49
 $176 = 14x$



$x = 12.57\text{ inches}$
 $m\widehat{GJ} = 100.08^\circ$

14. Find the exact value of JG.



$LK = 9 - 2$
 $LK = 7 \text{ ft}$



$$x^2 + 7^2 = 9^2$$

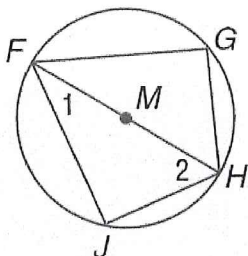
$$x = \sqrt{32}$$

$$x = 4\sqrt{2}$$

Find JG = $2(4\sqrt{2})$

JG = $8\sqrt{2} \text{ ft}$

15. **Example 5** Triangle FGH and FHJ are inscribed in $\odot M$ with $FG \cong FJ$. Find x if $m\angle 1 = 6x - 5$, and $m\angle 2 = 7x + 4$.



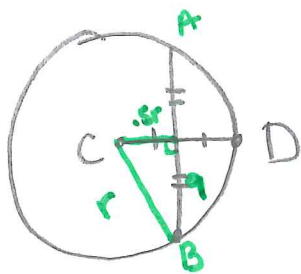
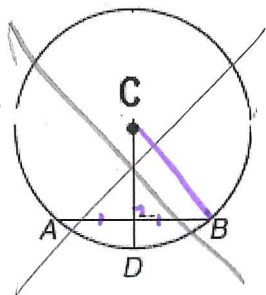
$$\angle 1 + \angle 2 + 90 = 180$$

$$6x - 5 + 7x + 4 + 90 = 180$$

$$13x + 89 = 180$$

$x = 7$

16. Find the radius of circle C if $AB = 14$ meters and AB bisects CD.



$$(.5r)^2 + 9^2 = r^2$$

$$.25r^2 + 81 = r^2$$

$$81 = .75r^2$$

$$108 = r^2$$

$$r = \sqrt{108}$$

$r = 6\sqrt{3} \text{ m}$

17. If the length of an arc with the measure of 120° is 14π , find the radius and diameter of the circle.

$$s = 14\pi$$

$$\alpha = 120^\circ$$

$$s = \frac{\alpha}{360} d\pi$$

$$14\pi = \frac{120}{360} \cdot d\pi$$

$$3 \cdot 14 = \frac{d}{3} \cdot 3$$

$d = 42 \text{ units}$
 $r = 21 \text{ units}$

ACC 10.1-10.4 Spiral Assignment Solutions

1.) $d = \frac{77\pi}{20}$ in 2.) a) 6.5 in b) 13.5 in

3.) 6π 4.) a) $3\pi f +$ b.) $d = 5.3\text{m}, r \approx 2.7\text{m}$

5.) a.) 52° , b.) 128° , c.) 140° , d.) 268°

6.) a.) 44° b.) 67° c.) 316° 7.) $\angle 1 = 48^\circ, \angle 3 = \angle 5 = 54^\circ$
 $\angle 4 = 106^\circ, \angle 2 = 20^\circ$

8.) $x = 25, \angle 1 = \angle 2 = 34^\circ, \angle 3 = \angle 4 = 56^\circ$ 9.) $\angle T = 78^\circ, \angle S = 93^\circ$

10.) a.) 127° b.) 4cm 11.) $RH = 12, PR = 9$

12.) $r = 2\sqrt{58}f +$ 13.) $x \approx 12.57\text{in}, m\widehat{GJ} = 100.08^\circ$

14.) $8\sqrt{2}f +$ 15.) 7 16.) $6\sqrt{3}\text{m}$ 17.) $d = 42, r = 21$