

# RISK

Chapter 12: Circles Review!

Name the following:

Chord: \_\_\_\_\_

Secant: \_\_\_\_\_

Tangent: \_\_\_\_\_

Point of Tangency: \_\_\_\_\_

Name the following:

Chord:  $\overline{RQ}$

Secant:  $\overline{ST}$

Tangent:  $\overline{UV}$

Point of Tangency:  $U$

TP is tangent to Circle O. If  $TP = 24$  and the radius of the circle is 18, find the measure of OP.

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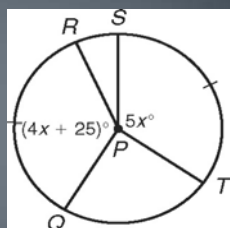
3-4-5 triple # 6

$OP = 5 \times 6 = 30$

**OP = 30**

3. If  $m\widehat{QR} = m\widehat{ST}$  Find the  $m\angle QPR$

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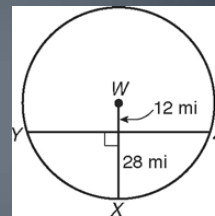
$$4x + 25 = 5x$$

$$25 = x$$

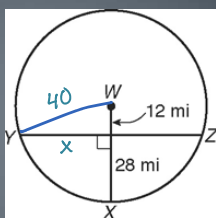
$$4(25) + 25$$

$$125 = \angle QPR$$

Given circle W, find YZ.



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WX = Radius = 40

$$40^2 = x^2 + 12^2$$

$$38.16 = x$$

$$\sqrt{Z} = 2(38.16)$$

$$\sqrt{Z} \approx 76.32$$

Find the exact arc length of a circle that has a measure of  $45^\circ$  and a diameter of 64 cm.

Find the exact arc length of a circle that has a measure of  $45^\circ$  and a diameter of 64 cm.

$$l = 2\pi r \left(\frac{m}{360}\right)$$

$$l = 2\pi(32) \left(\frac{45}{360}\right)$$

$$l = 8\pi \text{ cm}$$

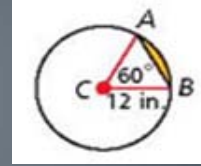
Find the exact area of the sector of a circle that has a measure of  $45^\circ$  and a diameter of 64 cm.

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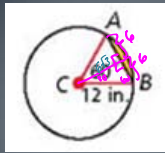
$$A = \pi r^2 \left( \frac{m}{360} \right)$$

$$A = \pi (32)^2 \left( \frac{45}{360} \right) = 128\pi \text{ cm}^2$$

Find the area of the segment.



Find the area of the segment.

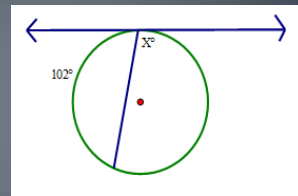


#1) Area of Sector  
 $A_s = \pi 12^2 \left( \frac{60}{360} \right) = 24\pi$

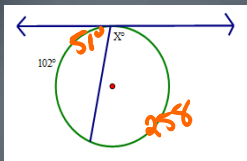
#2)  $A_{\Delta} = \frac{1}{2} (12)(6\sqrt{3}) = 36\sqrt{3}$

#3)  $A_s - A_{\Delta} = 24\pi - 36\sqrt{3}$   
 $\approx 13.1$

Solve for x.

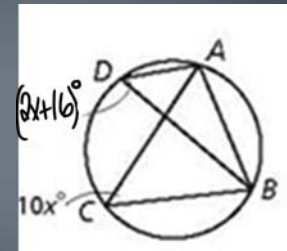


Solve for x.

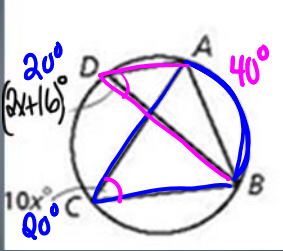


$$x = \frac{258}{2} = 129^\circ$$

Find the measure of arc AB



Find the measure of arc AB



$$2x + 16 = 10x$$

$$16 = 8x$$

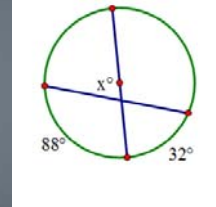
$$\boxed{2 = x}$$

$$\widehat{AB} = 2(\angle ACB)$$

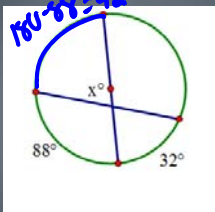
$$\widehat{AB} = 2(20)$$

$$\widehat{AB} = 40^\circ$$

Solve for x:



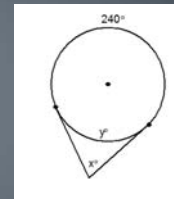
Solve for x:



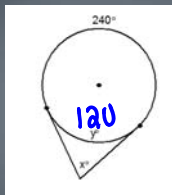
$$\frac{1}{2}(\text{arc} + \text{arc})$$

$$\frac{1}{2}(88 + 32) = 62^\circ$$

Solve for x and y



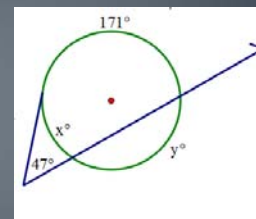
Solve for x and y  $y = 360 - 240 = 120^\circ$



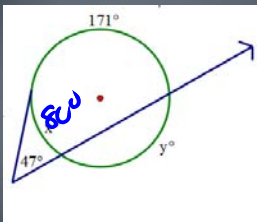
$$\frac{240 - 120}{2} = x$$

$$\boxed{60^\circ = x}$$

Solve for x and y:



Solve for x:



①  $\frac{171 - x}{2} = 47$

$$171 - x = 94$$

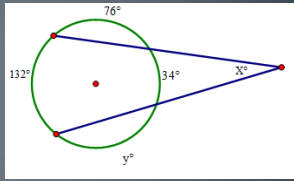
$$-x = -77$$

$$x = 77^\circ$$

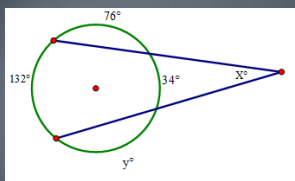
#2  $77 + 171 + y = 360$

$$y = 112^\circ$$

Solve for x and y:



Solve for x:



#1  $\frac{132 - y}{2} = x$

$$49^\circ = x$$

#2  $132 + 76 + y = 360$

$$y = 118^\circ$$

What is the center and radius of a circle that has an equation of  $(x + 16)^2 + (y - 11)^2 = 300$ .

What is the center and radius of a circle that has an equation of  $(x + 16)^2 + (y - 11)^2 = 300$ .

$C = (-16, 11)$   $R = \sqrt{300} = 10\sqrt{3}$

Write an equation of a circle with a center of  $(0, 6)$  and a point  $(-9, 3)$ .

14.) Write an equation of a circle with a center of (0, 6) and a point (-9, 3).

$$(x-0)^2 + (y-6)^2 = r^2$$

$$(-9-0)^2 + (3-6)^2 = r^2$$

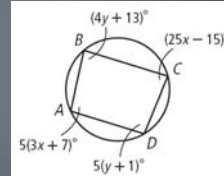
$$(-9)^2 + (-3)^2 = r^2$$

$$81 + 9 = r^2$$

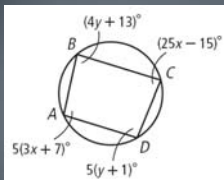
$$90 = r^2$$

$$(x-0)^2 + (y-6)^2 = 90$$

Find the value of x and y



Find the value of x and y



$$\textcircled{1} 4y + 13 + 5y + 6 = 180$$

$$9y + 18 = 180$$

$$9y = 162$$

$$y = 18$$

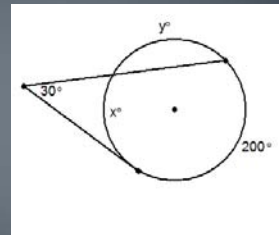
$$\textcircled{2} 15x + 35 + 25x - 15 = 180$$

$$40x + 20 = 180$$

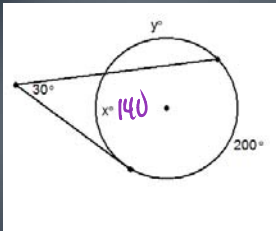
$$40x = 160$$

$$x = 4$$

Solve for x and y



Solve for x and y



$$\textcircled{1} \frac{200 - x}{2} = 30$$

$$200 - x = 60$$

$$-x = -140$$

$$x = 140$$

$$\textcircled{2} 140 + 200 + y = 360$$

$$y = 20$$