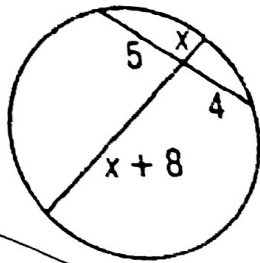


Name: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Class: \_\_\_\_\_

Geometry  
 Unit 10  
 HW 10-6

1)



Find x

$$x(x+8) = 5 \cdot 4$$

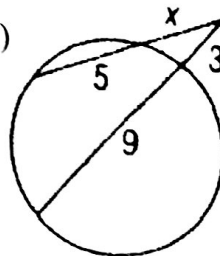
$$x^2 + 8x = 20$$

$$x^2 + 8x - 20 = 0$$

$$(x+10)(x-2) = 0$$

$x=2$

2)



Find x

$$x(x+5) = 3(12)$$

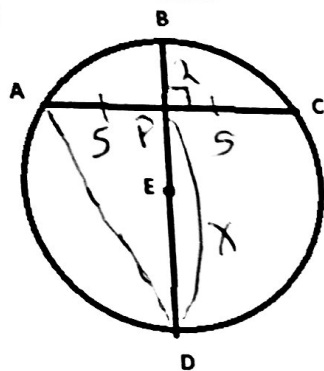
$$x+5x = 36$$

$$x+5x = 36 = 0$$

$$(x+9)(x-4) = 0$$

~~x = -9~~  
 x = 4

3)



$\overline{AC} \perp \overline{BD}$  and they intersect at point P. If  $AC = 10$  and  $BP = 2$ , find PD and AD.

$$2 \cdot x = 5 \cdot 5$$

$$2x = 25$$

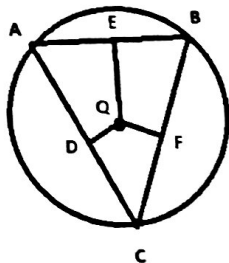
$$x = 12.5$$

$$PD \rightarrow 12.5$$

$$5^2 + 12.5^2 = x^2$$

$$x = \sqrt{181.25} = AD$$

3)



$QD = 2$  in,  $QF = 4$  in, and  $QE = 6$  in. Those 3 distances are the distance from the side to the center. Which is the shortest side of the triangle and which is the largest angle and how do you know?

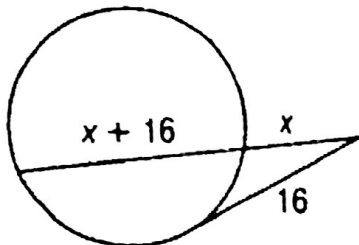
shortest side  $\rightarrow \overline{AB}$  (furthest from center)

largest side  $\rightarrow \overline{AC}$  (closest to center)

largest  $\angle \rightarrow \angle B$  (opp largest side)

4)

Find x



$$x(x+16) = 16^2$$

$$2x^2 + 16x = 256$$

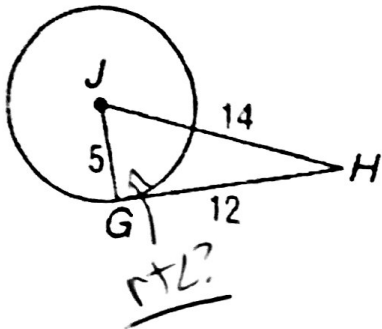
$$2x^2 + 16x - 256 = 0$$

$$2(x^2 + 8x - 128) = 0$$

$$2(x+16)(x-8)$$

~~x = -16~~  $x = 8$

5)



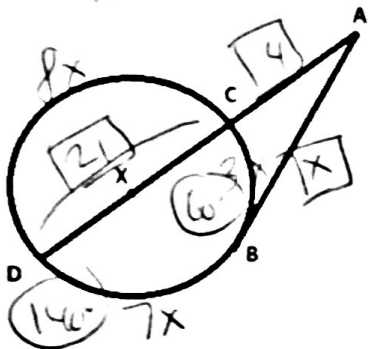
Is  $\overline{HG}$  a tangent

$$5^2 + 12^2 \stackrel{?}{=} 14^2$$

$$169 \neq 196$$

NOT  $\perp$   
SO NOT tangent

6)



In  $\odot P$   $\widehat{CB} : \widehat{BD} : \widehat{DC} = 3 : 7 : 8$ .  $m\angle A = \frac{1}{2}(m\widehat{BD} + m\widehat{AB})$   
Find  $m\angle A$

$$18x = 360$$

$$x = 20$$

$$m\angle A = \frac{1}{2}(140 + 60)$$

$$m\angle A = \frac{1}{2}(200)$$

$$m\angle A = 100$$

7) In #6 if  $\overline{AB}$  is a tangent,  $AC = 4$ , and  $CD = 21$ , find  $AB$

$$4 \cdot 25 = x^2 \quad \sqrt{100} = \sqrt{x^2} \quad x = 10 = AB$$

8)



$m\angle DEC = 10x - 10$ ,  $m\widehat{AB} = 4x + 8$ , and

$m\widehat{CD} = 14x + 8$ . Find  $m\angle BEC$

$$m\angle DEC = \frac{1}{2}(m\widehat{AB} + m\widehat{DC})$$

$$2(10x - 10) = \frac{1}{2}(4x + 8 + 14x + 8)$$

$$20x - 20 = 18x + 16$$

$$2x = 36$$

$$x = 18$$

$$m\angle DEC = 10(18) - 10 = 170$$

$$\star m\angle DEC + m\angle BEC = 180 \text{ (lin pair)}$$

$$180 - 170 = 10 = m\angle BEC$$

9) In #8 if  $BE = 6$ ,  $BD = 18$ , and  $AE = 4$ , find  $EC$

$$6 \cdot 12 = 4 \cdot x$$

$$72 = 4x$$

$$x = 18$$