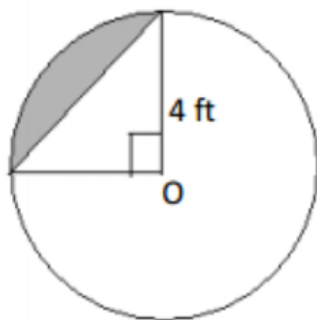


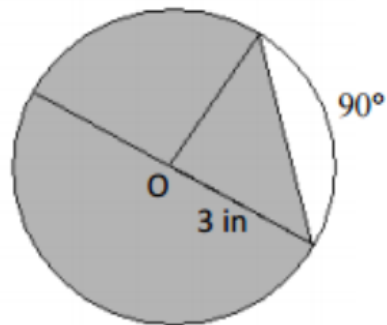
Welcome! please grab your ISN and Warmup notebook and have a seat!

Find the exact area of each shaded region. Point O marks the center of a circle.

44.



45.



Jan 21-8:14 AM

Corrections to the study guide....


1. $h = 2.8$

4. Switch 10 and x so x is the inside piece

14. $h = 5.6$

Jan 26-9:53 AM

1. A circle has a radius of 3.7 centimeters as shown below. Determine the area, in square centimeters, of a segment formed by a chord with a central angle of 65° . Round your answer to the nearest hundredth.



$h = 2.8\text{cm}$

Sector - Δ

$$\frac{x}{360} \pi r^2 - \frac{1}{2}bh$$

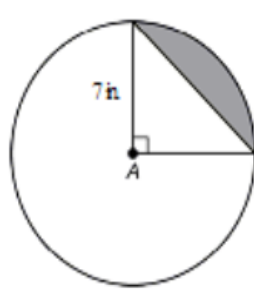
$$\frac{65}{360} \pi (3.7)^2 - \frac{1}{2}(3.7)(2.8)$$

$$7.76 - 5.18$$

2.58 cm²

Jan 21-8:13 AM

2. Determine the area, in square inches, of the shaded segment of $\odot A$ in the diagram below. Round your answer to the nearest hundredth.



Sector - Δ

$$\frac{x}{360} \pi r^2 - \frac{1}{2}bh$$

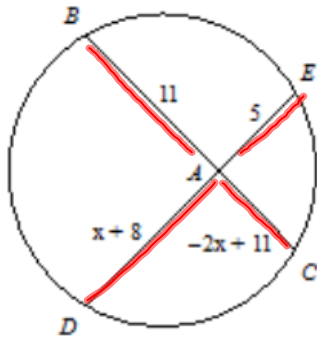
$$\frac{90}{360} \pi (7)^2 - \frac{1}{2}(7)(7)$$

$$38.465 - 24.5$$

13.97 in²

Jan 21-8:15 AM

3. In the circle below, use the expressions for the segment lengths to write and solve an equation for x

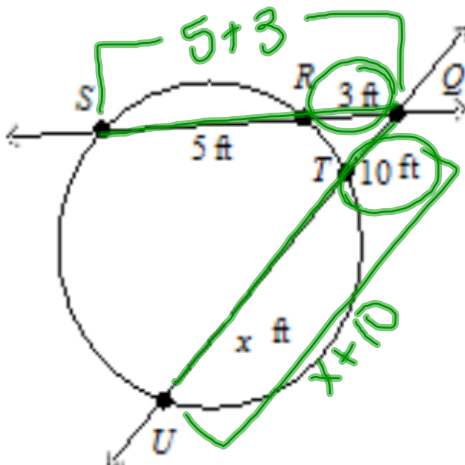


$$11(-2x + 11) = 5(x + 8)$$

$$\begin{array}{r} -22x + 121 = 5x + 40 \\ \underline{-5x} \quad \downarrow \quad \underline{-5x} \quad \downarrow \\ -27x + 121 = 40 \\ \underline{\downarrow -121} \quad \underline{-121} \\ -27x = -81 \\ \underline{-27} \quad \underline{-27} \\ x = 3 \end{array}$$

Jan 21-8:15 AM

4. Determine the value of x in the diagram

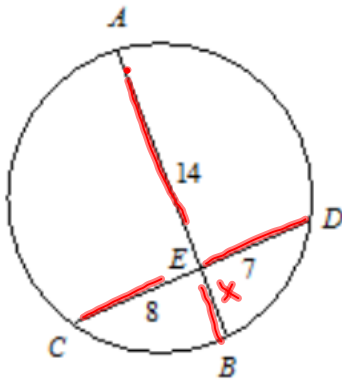


$$(5 + 3)3 = (x + 10)10$$

$$\begin{array}{r} 24 = 10x + 100 \\ \underline{-100} \quad \downarrow \quad \underline{-100} \\ -76 = 10x \\ \underline{10} \quad \underline{10} \\ -7.6 \text{ ft} = x \end{array}$$

Jan 21-8:15 AM

5. In the circle below, chords \overline{AB} and \overline{CD} intersect at E . Determine BE .



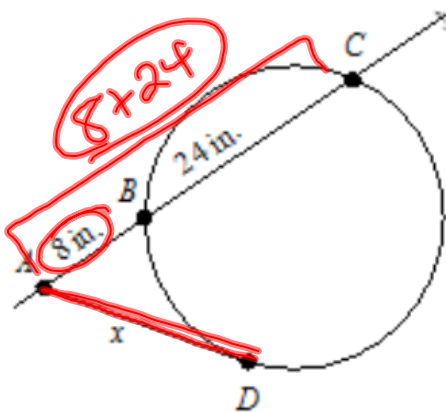
$$14(x) = 8(7)$$

$$\frac{14x}{14} = \frac{56}{14}$$

$$x = 4$$

Jan 21-8:15 AM

6. Determine the value of x in the diagram below.



$$8(8+24) = x^2$$

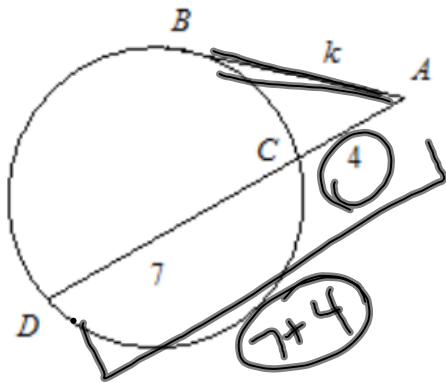
$$32$$

$$\sqrt{256} = \sqrt{x^2}$$

$$16 = x$$

Jan 21-8:22 AM

7. Determine the value of k . Round your answer to the nearest hundredth.



$$(7+4)4 = k^2$$

$$\sqrt{44} = \sqrt{k^2}$$

$$k = 6.63$$

Jan 21-8:24 AM

8. Find the circumference and area of a circle with a diameter of 14 meters

$$C = 2\pi r \quad d = 14m \quad A = \pi r^2$$

$$C = 2(3.14)(7) \quad r = 7m \quad A = \pi(7)^2$$

$$C = 43.96m \quad A = 153.86m^2$$

Jan 21-8:24 AM

9. Determine the diameter of a circle with an area of 153.86in^2 . Use 3.14 for pi

$$A = \pi r^2$$

$$\frac{153.86}{3.14} = \frac{3.14}{3.14} r^2$$

$$\sqrt{49} = \sqrt{r^2}$$

$$r = 7$$

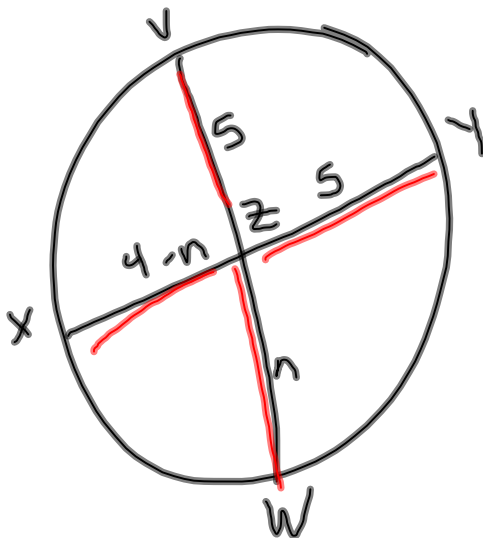
$$2r = d$$

$$2(7) = d$$

$$14\text{in} = d$$

Jan 21-8:24 AM

10. In $\odot A$, chords \overline{VW} and \overline{XY} intersect at Z. Suppose $VZ = 5$, $WZ = n$, $XZ = 4 - n$, and $YZ = 5$. Write and solve an equation for n .



$$5(n) = 5(4 - n)$$

$$5n = 20 - 5n$$

$$+5n \quad \quad \quad \downarrow +5n$$

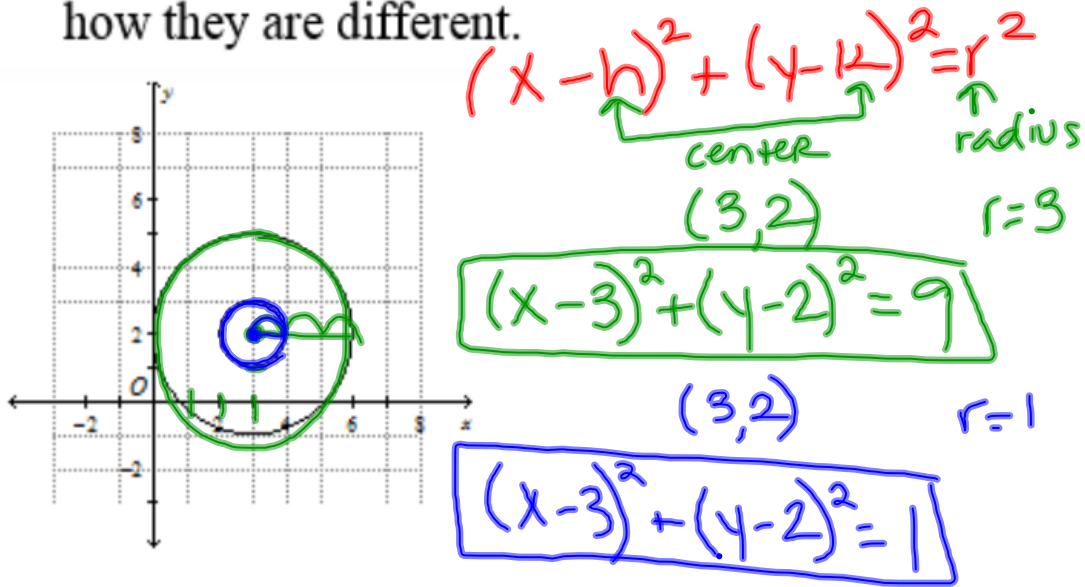
$$10n = 20$$

$$\frac{10n}{10} = \frac{20}{10}$$

$$n = 2$$

Jan 21-8:24 AM

11. Write the equations for the ~~concentric~~ circles shown below. Describe how the equations are similar and how they are different.



Jan 21-8:25 AM

12. The area of one circle is 78.5cm^2 .
 The area of another circle is 254.34cm^2 .
 Find the difference in the circumferences of the two circles. Use 3.14 for pi.

①

$$\frac{78.5}{3.14} = \frac{\pi r^2}{3.14}$$

$$\sqrt{25} = \sqrt{r^2}$$

$$r = 5$$

$$C = 2\pi r$$

$$C = 2(3.14)(5)$$

$$C = 31.4$$

②

$$\frac{254.34}{3.14} = \frac{\pi r^2}{3.14}$$

$$\sqrt{81} = \sqrt{r^2}$$

$$r = 9$$

$$C = 2\pi r$$

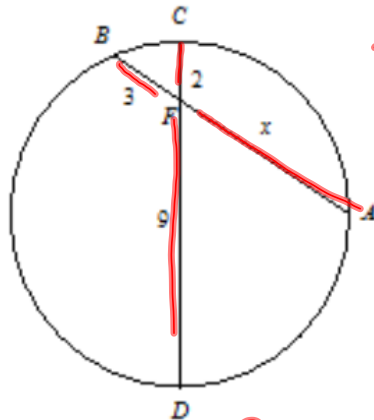
$$C = 2(3.14)(9)$$

$$C = 56.52$$

$$\begin{array}{r} 56.52 \\ - 31.4 \\ \hline 25.12 \end{array}$$

Jan 21-8:26 AM

13. Find the value of x and the length of each chord.



$$3(x) = 2(9)$$

$$\frac{3x}{3} = \frac{18}{3}$$

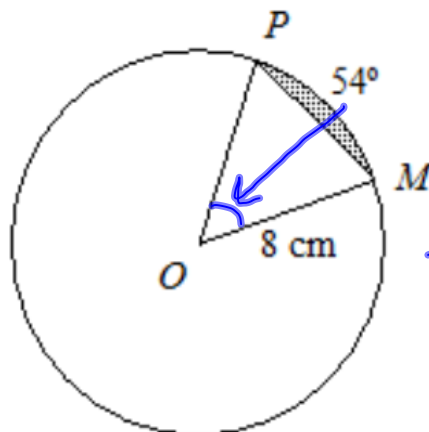
$$x = 6$$

$$BA = 3 + 6 = 9$$

$$CD = 2 + 9 = 11$$

Jan 21-8:26 AM

14. Find the area of the segment. Use 3.14 for π , and round your answer to the nearest tenth



$$h = 5.6 \text{ cm}$$

Sector - Δ

$$\frac{x}{360} \pi r^2 - \frac{1}{2} bh$$

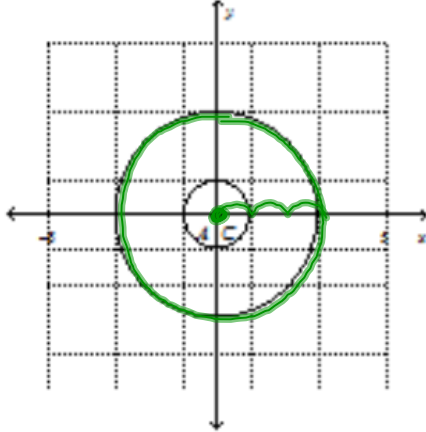
$$\frac{54}{360} \pi (8)^2 - \frac{1}{2} (8)(5.6)$$

$$30.144 - 22.4$$

$$\boxed{7.7 \text{ cm}}$$

Jan 21-8:27 AM

15. Determine the equation of the larger circle.



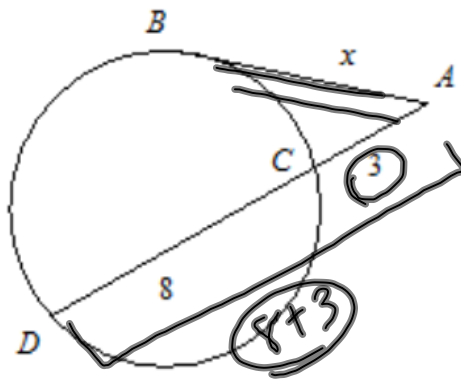
$$(x-h)^2 + (y-k)^2 = r^2$$

\uparrow $(0,0)$ \downarrow
 3

$$x^2 + y^2 = 9$$

Jan 21-8:27 AM

16. Determine the value of x . Round your answer to the nearest hundredth.



$$(8+3)3 = x^2$$

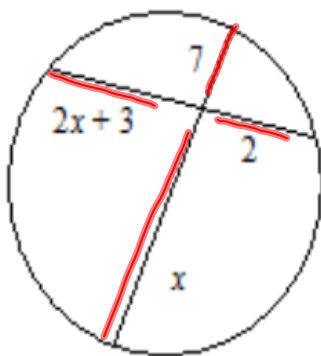
$$11 \sqrt{33} = x^2$$

$$\sqrt{33} = \sqrt{x^2}$$

$$x = 5.74$$

Jan 21-8:27 AM

17. Use the expressions for the segment lengths to write and solve an equation for x .



$$(2x+3) \cdot 2 = 7(x)$$

$$4x + 6 = 7x$$

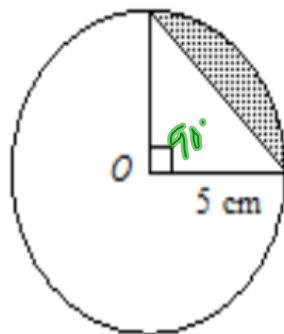
$$\underline{-4x \quad -4x}$$

$$6 = 3x$$

$$\boxed{x=2}$$

Jan 21-8:27 AM

18. Find the area of the shaded segment of circle.



sector - Δ

$$\frac{x}{360} \pi r^2 - \frac{1}{2}bh$$

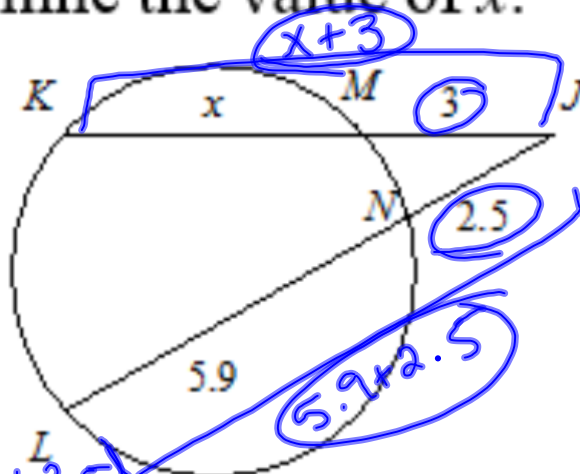
$$\frac{90}{360} \pi (5)^2 - \frac{1}{2}(5)(5)$$

$$19.625 - 12.5$$

$$\boxed{7.125 \text{ cm}^2}$$

Jan 21-8:30 AM

19. Determine the value of x .



$$(x+3)3 = (5.9+2.5)2.5$$

$$3x+9 = 21$$

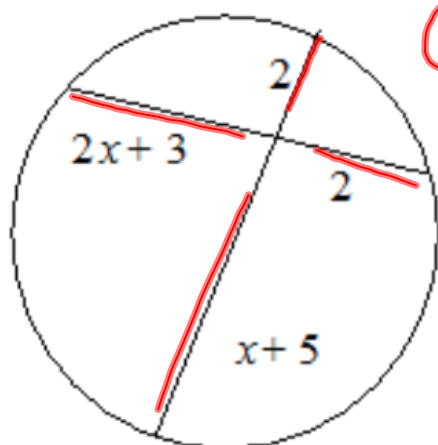
$$\begin{array}{r} \downarrow -9 \quad -9 \\ \hline 3x = 12 \end{array}$$

$$\frac{3x}{3} = \frac{12}{3}$$

$$\boxed{x=4}$$

Jan 21-8:30 AM

20. Use the expressions for the segment lengths to write and solve an equation for x .



$$(2x+3)2 = 2(x+5)$$

$$4x+6 = 2x+10$$

$$\begin{array}{r} -2x \downarrow \quad -2x \downarrow \\ \hline 2x+6 = 10 \end{array}$$

$$2x+6 = 10$$

$$\begin{array}{r} \downarrow -6 \quad -6 \\ \hline 2x = 4 \end{array}$$

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

$$\boxed{x=2}$$

Jan 21-8:31 AM