

Find and sit in new seat!!!
 Grab a Bell Ringer and hw tracker



Monday 3/25

Using the pool of answers below fill in the missing statements and reasons

Given: N is a midpoint of \overline{LW} and N is the midpoint of \overline{SK} .
 Prove: $\triangle LNS \cong \triangle WNK$

Statement	Reason
N is a midpoint of \overline{LW}	1. Given
$\overline{LN} \cong \overline{NW}$	2. Def of midpoint
3. N is midpt of \overline{SK}	Given
4. $\overline{SN} \cong \overline{NK}$	Definition of Midpoint
$\angle LNS \cong \angle WNK$	5. Vertical \angles \cong
6. $\triangle LNS \cong \triangle WNK$	7. SAS

Statements:

N is the midpoint of \overline{LW}

$\angle LNS \cong \angle WNK$

N is the midpoint of \overline{SK}

$\triangle LNS \cong \triangle WNK$

$\overline{SN} \cong \overline{NK}$

Reasons: (Each Reason can be used more than once.)

Given

SAS

ASA

Definition of Midpoint

Alternate Interior Angles are congruent

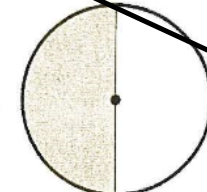
Vertical Angles are congruent

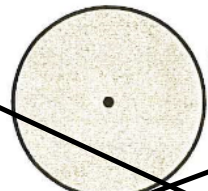
correct 12.4

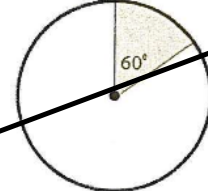
Sec. 12.4 – Area and Sector Area of a circle

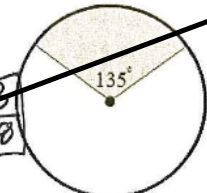
Name Key Hr _____

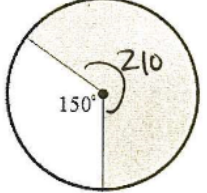
What fraction of each circle is shaded?

1.  $\frac{1}{2}$

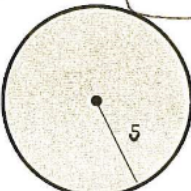
2.  1

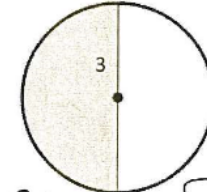
3.  $\frac{60}{360} = \frac{1}{6}$

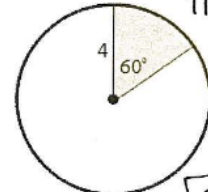
4.  $\frac{135}{360} = \frac{3}{8}$

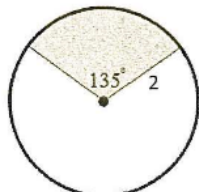
5.  $\frac{210}{360} = \frac{7}{12}$

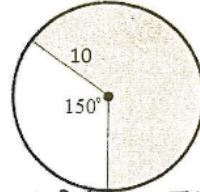
Find the area of each shaded sector. $A = \pi r^2 \left(\frac{\theta}{360} \right)$

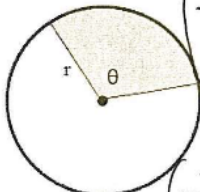
6.  $25\pi = 78.5 \text{ units}^2$

7.  $\pi 3^2 \left(\frac{1}{2} \right) = \frac{9\pi}{2} = 14.1 \text{ units}^2$

8.  $\pi 4^2 \left(\frac{1}{6} \right) = \frac{16\pi}{6} = \frac{8\pi}{3} = 8.4 \text{ units}^2$

9.  $\pi 2^2 \left(\frac{3}{20} \right) = \frac{12\pi}{10} = \frac{3\pi}{2} = 4.7 \text{ units}^2$

10.  $\pi 10^2 \left(\frac{7}{12} \right) = \frac{700\pi}{12} = 183.3 \text{ units}^2$

11.  $\pi r^2 \left(\frac{\theta}{360} \right)$ or $\left(\frac{\theta}{360} \right) \pi r^2$

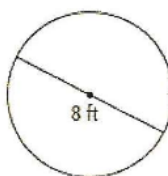
12. What is a general formula to find an area of a sector?

$$\left(\frac{\theta}{360}\right)r^2\pi \quad \text{or} \quad \left(\frac{\theta}{360}\right)\pi r^2 \quad \text{or} \quad \pi r^2\left(\frac{\theta}{360}\right)$$

Practice Section 12.2 Area of Circles and Shaded Regions

Find the area of the circle.

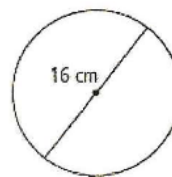
13.



$$\pi(4)^2$$

$$16\pi \approx 50.3 \text{ ft}^2$$

14.



$$\pi(8)^2$$

$$64\pi \approx 201.1 \text{ cm}^2$$

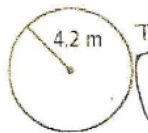
15.



$$\pi(13)^2$$

$$169\pi \approx 530.9 \text{ cm}^2$$

😊 16.



$$\pi(4.2)^2$$

$$17.64\pi \approx 55.4 \text{ m}^2$$

Given the area find the radius. $A = \pi r^2$

17. $A = 8 \text{ cm}^2$

$$\frac{\pi r^2}{\pi} = \frac{8}{\pi}$$

$$\sqrt{r^2} = \sqrt{\frac{8}{\pi}} \approx 1.6 \text{ cm}$$

18. $A = 125 \text{ cm}^2$

$$\frac{125}{\pi} = \frac{\pi r^2}{\pi}$$

$$\sqrt{\frac{125}{\pi}} = \sqrt{r^2}$$

$$r \approx 6.3 \text{ cm}$$

Given the area find the circumference. $C = 2\pi r$

19. $A = 50 \text{ cm}^2$

$$50 = \pi r^2$$

$$r \approx \sqrt{\frac{50}{\pi}}$$

$$C = 2\pi \sqrt{\frac{50}{\pi}} \approx 25.1 \text{ cm}$$

😊 20. $A = 75 \text{ cm}^2$

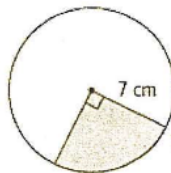
$$\frac{75}{\pi} = \frac{\pi r^2}{\pi} \quad r \approx 4.9$$

$$\sqrt{\frac{75}{\pi}} = \sqrt{r^2}$$

$$C = 2\pi \sqrt{\frac{75}{\pi}} \approx 30.7 \text{ cm}$$

Find the Area of the shaded region.

😊 21.

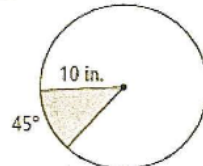


$$\pi 7^2 \left(\frac{90}{360}\right)$$

$$= 49\pi \left(\frac{1}{4}\right)$$

$$\approx 38.5 \text{ cm}^2$$

22.

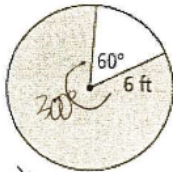


$$A = \pi 10^2 \left(\frac{45}{360}\right)$$

$$= 100\pi \left(\frac{1}{8}\right)$$

$$\approx 39.3 \text{ in}^2$$

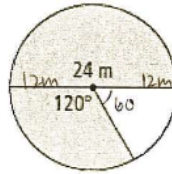
23.



$$\frac{300}{360} (\pi 6^2) = \frac{5}{6} (36\pi)$$

$$\approx 94.2 \text{ ft}^2$$

24.

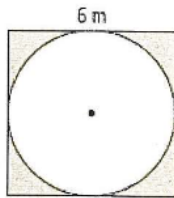


$$\frac{300}{360} (\pi 12^2)$$

$$= \frac{5}{6} (144\pi)$$

$$\approx 377 \text{ m}^2$$

25.

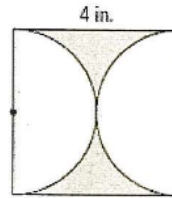


square - circle

$$6 \cdot 6 - \pi 3^2$$

$$36 - 9\pi$$

$$\approx 7.7 \text{ m}^2$$



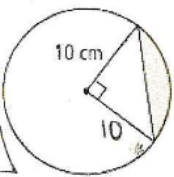
square - circle

$$4 \cdot 4 - \pi 2^2$$

$$= 16 - 4\pi$$

$$\approx 3.4 \text{ in}^2$$

27.



A triangle =

$$\frac{1}{2} (10)(10) = 50$$

$$\frac{1}{2} (100) = 50 \text{ cm}^2$$

Sector =

$$\frac{90}{360} (\pi 10^2)$$

$$\frac{100\pi}{4} = 25\pi$$

$$25\pi - 50$$

$$\approx 29.53 \text{ cm}^2$$



circle - square

$$11^2 - (\pi)(11^2)$$

$$= 4\pi - 9$$

$$4\pi - 9 = 4.57$$

$$4.57 \left(\frac{3}{4}\right) = 3.43 \text{ units}^2$$

A pizza has a radius of 10in. Use this information to answer questions 29-31.

29.

You eat three pieces of a pizza divided into eight slices. What is the area of the pizza you ate?



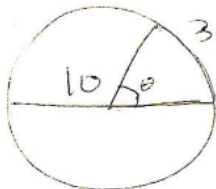
$$\frac{3}{8} \pi 10^2 \approx 117.8 \text{ in}^2$$

30. A large pizza has a radius of 12in. What is the area of half of the large pizza?



$$A = \pi 12^2 \left(\frac{1}{2}\right) = \frac{144\pi}{2} = 72\pi \approx 226.2 \text{ in}^2$$

31. A slice is removed. The length of the crust of the missing slice is 3in. What is the area of the missing slice?



$$C = \pi 20$$

$$= 62.83$$

$$- 3$$

$$\frac{\quad}{59.83}$$

% of circumference that is 3 inches...

$$\frac{3}{62.83} = .047746 = 4.77\%$$

$$100\pi (.047746) = 15 \text{ m}^2$$

Area (4.77%) =

Turn in hw trackers - Week 3

12.1 Central and Inscribed Angles and Arcs

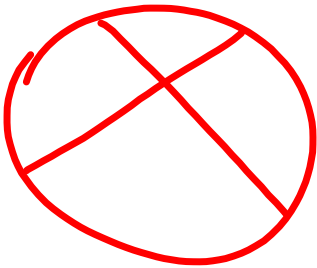
12.2 Arcs and Angles

12.3 Circumference and Arc Length

12.4 Area and Sector Area

/40

Power Theorems!



Chord - Chord


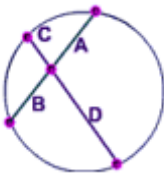
Tangent - Secant

Secant - Secant

Interior Segments

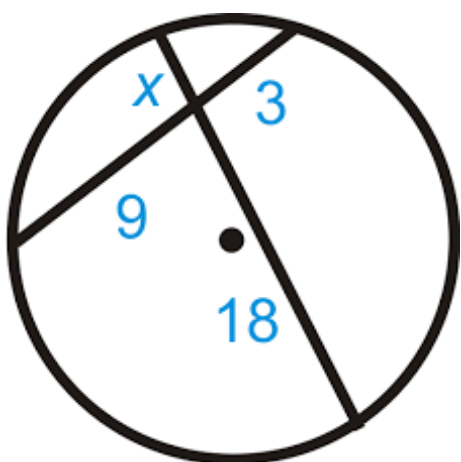
(Chord-Chord)

$ab = cd$



Ex. $5(9) = x(15)$

Solve for x

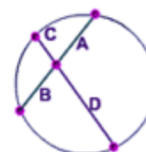


$$9 \cdot 3 = x \cdot 18$$

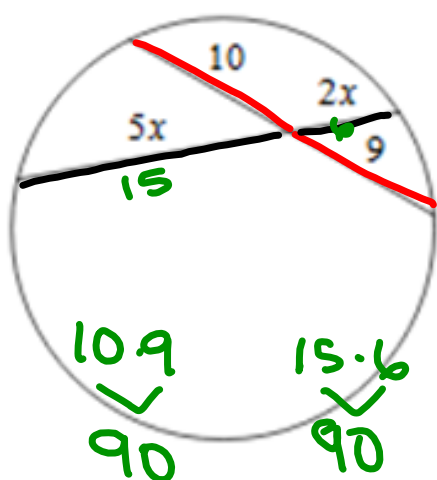
$$\frac{27}{18} = \frac{18x}{18}$$

$$\frac{3}{2} = 1.5 = x$$

$$ab = cd$$



Solve for x



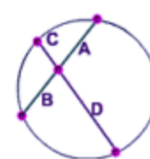
$$10 \cdot 9 = 2x \cdot 5x$$

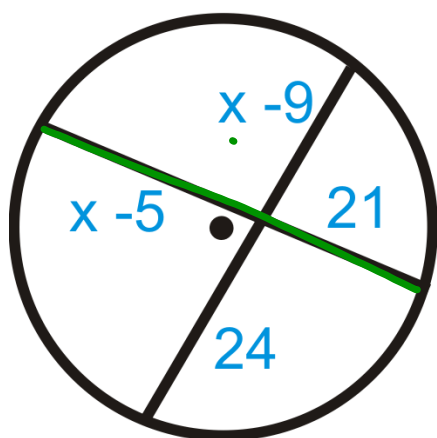
$$\frac{90}{10} = \frac{10x^2}{10}$$

$$\sqrt{9} = \sqrt{x^2}$$

$$3 = x$$

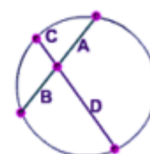
$$ab = cd$$





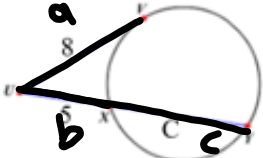
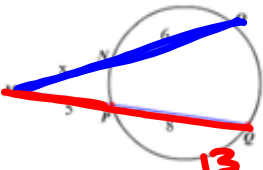
Solve for x

$$ab = cd$$



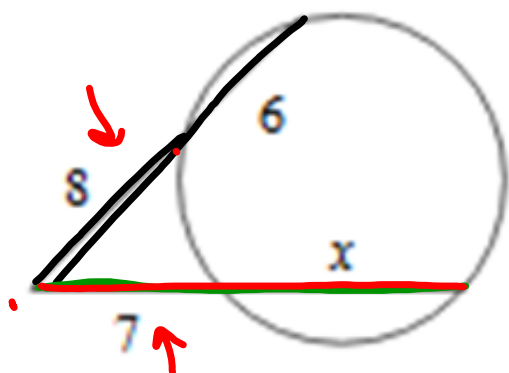
$$\begin{aligned}
 21(x-5) &= 24(x-9) \\
 21x - 105 &= 24x - 216 \\
 -21x + 216 &\quad -21x + 216 \\
 \frac{111}{3} &= \frac{3x}{3} \\
 37 &= x
 \end{aligned}$$

Exterior Segment

(Secant-Secant)	(Tangent-Secant)
(outside)(whole)=(outside)(whole)	
	$8(8) = 5(5 + c)$
$x(x+6) = 5(5+8)$ $(\overline{p})(\overline{w}) = (\overline{o})(\overline{w})$	$d^2 = b(b+c)$

Solve for x

(outside)(whole)=(outside)(whole)



$$8(8+6) = 7(7+x)$$

$$112 = 49 + 7x$$

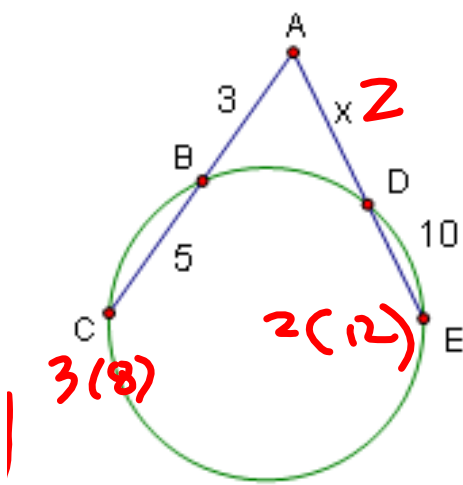
$$\begin{array}{r} 112 \\ -49 \\ \hline 63 \end{array} = \begin{array}{r} 49 \\ -49 \\ \hline 7x \end{array}$$

$$\frac{63}{7} = \frac{7x}{7}$$

$$9 = x$$

Solve for x

(outside)(whole)=(outside)(whole)



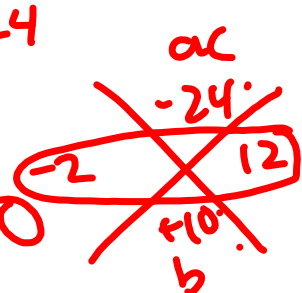
$$3(8) = x(x+10)$$

$$24 = x^2 + 10x - 24$$

$\begin{matrix} a & b & c \\ x^2 & +10x & -24 \end{matrix}$

$$0 = x^2 + 10x - 24$$

$$(x-2)(x+12) = 0$$



$$x-2=0$$

$$+2 \quad +2$$

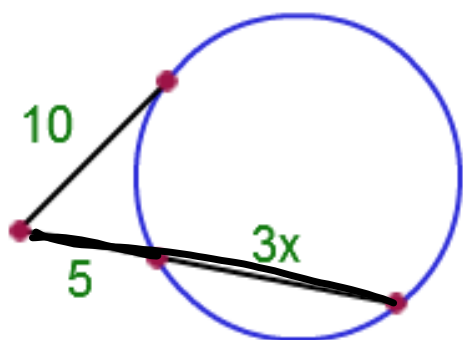
$$x=2$$

$$x+12=0$$

$$-12 \quad -12$$

$$x=-12$$

Solve for x

 $(\text{outside})(\text{whole}) = (\text{outside})(\text{whole})$ 

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

$$100 = 25 + 15x$$

$$-25 \quad -25$$

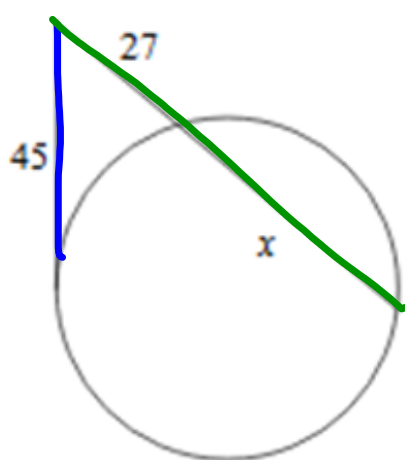
$$75 = 15x$$

$$\frac{75}{15} = \frac{15x}{15}$$

$$5 = x$$

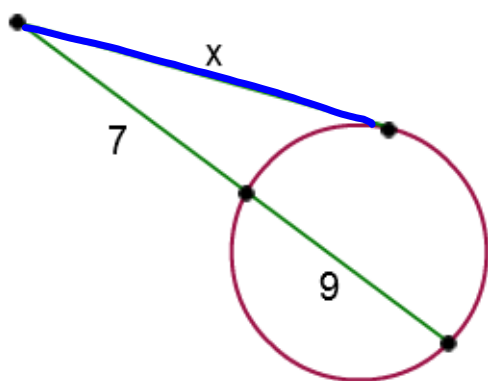
Solve for x

(outside)(whole)=(outside)(whole)



$$\begin{aligned}45(45) &= 27(27+x) \\2025 &= 729 + 27x \\-729 &\quad -729 \\1296 &= 27x \\ \frac{1296}{27} &= \frac{27x}{27} \\48 &= x\end{aligned}$$

Solve for x

 $(\text{outside})(\text{whole}) = (\text{outside})(\text{whole})$ 

$$x \cdot x = 7(16)$$
$$\sqrt{x^2} = \sqrt{112} = 4\sqrt{7}$$
$$7 \sqrt{16} \approx 10.6$$

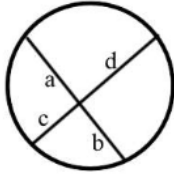
(4 4)

due Wednesday - ODDS

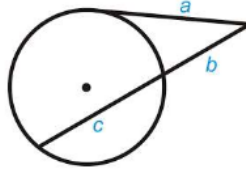
Name: _____ Hour: _____

12.5 Segment Lengths

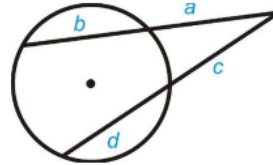
Three rules:



Two Chords
 $ab = cd$

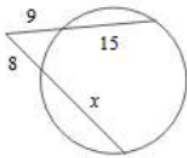


Secant and Tangent
 $b(b+c) = a^2$

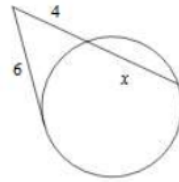


Two Secants
 $a(a+b) = c(c+d)$

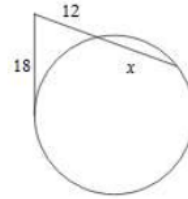
1.



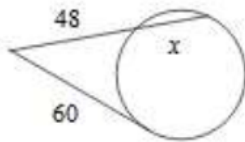
2.



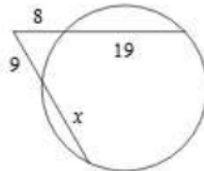
3.



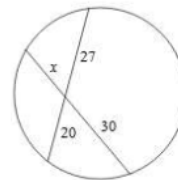
4.



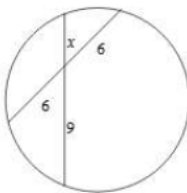
5.



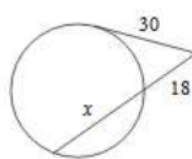
6.



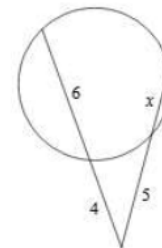
7.



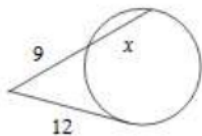
8.



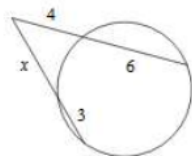
9.



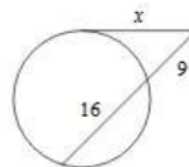
10.



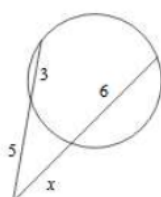
11.



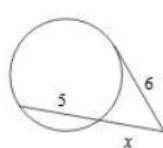
12.



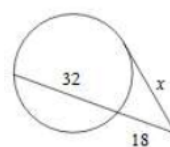
13.



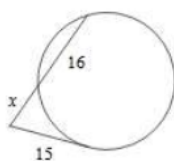
14.



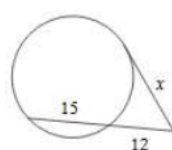
15.



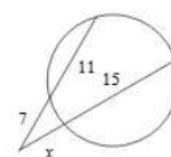
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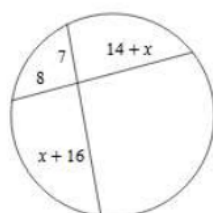
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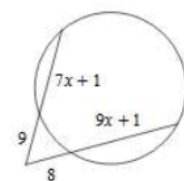
18.



19.



20.



21.

