Mrs. Warfel's

Geometry Packet

for April 27th – May 8th

If you have access to the internet, please visit my website to watch the videos that go along with the worksheets. Do all of the "Extra Practice Problems" online using the links from my website.

Also, if you have access to the internet, do the QUIZIZZ online. The codes are on my website.

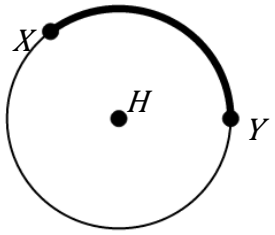
https://warfelb.wixsite.com/mrswarfelscms/home-1

Name _____ Date_____

Arc Length - Independent Practice

You do not have to print out or turn in this worksheet! Do the practice problems while you watch the video on my website!

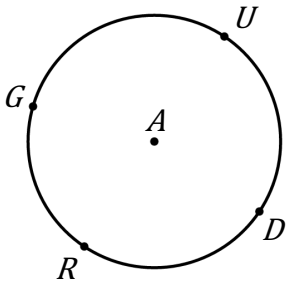
1. Consider circle H.



Part A: If $\overline{XH} = 10$ feet and $m\widehat{XY} = 100°$, then determine the **arc length** of $\widehat{XY}$.	*Part B:* If $\widehat{YX} = 24$ meters and $m\widehat{YX} = 120°$, then **determine the radius** of circle H.

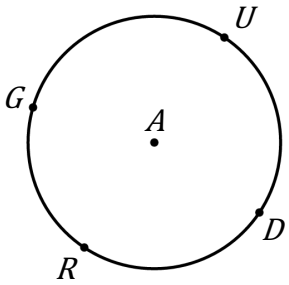
2. Consider the circle with center A.

If $\overline{GA} = 12$ feet and a major arc $m\widehat{GDR} = 200°$, then determine the **minor arc length** of $\widehat{GR}$.



3. Consider the circle with center A.

If the minor arc $\widehat{GU} = 24$ units and major arc $m\widehat{GDU} = 270°$, then determine the **radius** of circle A.



If you have the internet, PLEASE click the link to these questions on my website.

Arc Length **FORMS QUESTIONS**

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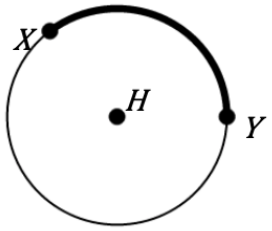
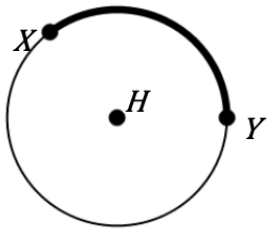
PLEASE DO NOT TURN THIS PAPER IN, IF YOU HAVE THE INTERNET!

Consider circle H.



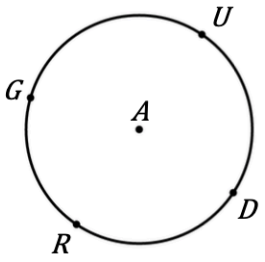
If $\overline{HY} = 46$ inches and $m\widehat{YX} = 75°$, then determine the **arc length** of $\widehat{YX}$. Use 3.14 for π.

Consider circle H.



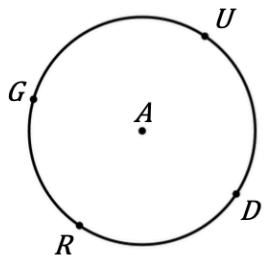
If $\widehat{XY} = 78$ miles and $m\widehat{XY} = 70°$, then **determine the radius** of circle H. Use 3.14 for π.

Consider the circle below with center A.



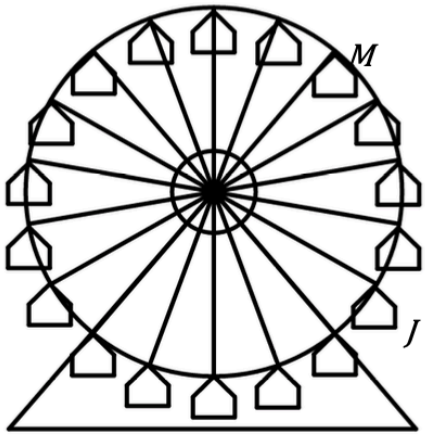
If $\overline{GA} = 29$ and a major arc $m\widehat{DUG} = 185°$,then determine the **minor arc length** of $\widehat{GD}$. Use 3.14 for π.

Consider the circle below with center A.



If the minor arc $\widehat{GR} = 20$ units and major arc $m\widehat{GDR} = 260°$, then determine the radius of circle A. Use 3.14 for π.

The *Skyview Atlanta* in Atlanta, Georgia is a super-sized Ferris wheel that overlooks the city and is 200 feet in radius length.

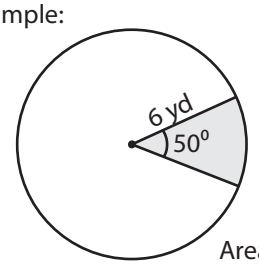


If a passenger rides clockwise from points M to point J and stops, then determine how many feet the passenger has traveled. Use 3.14 for π.

How many feet a passenger would travel if the full ride is two revolutions. (Two times around.) Use 3.14 for π.

Area of a Sector

Example:

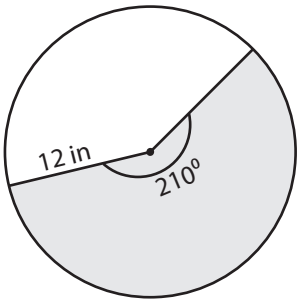


Area=?

You do not have to print out or turn in this worksheet! Do the practice problems while you watch the video on my website!

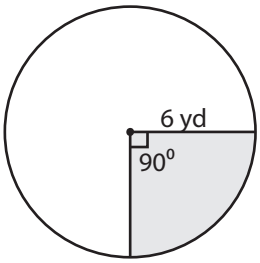
Find the area of each shaded region. Round the answer to two decimal places. (use π=3.14)

1)



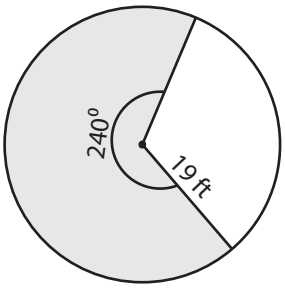
Area = _____

2)



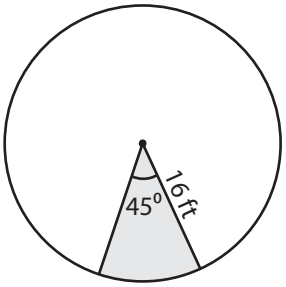
Area = _____

3)



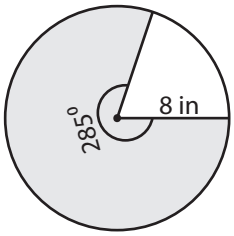
Area = _____

4)



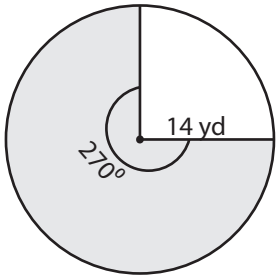
Area = _____

5)



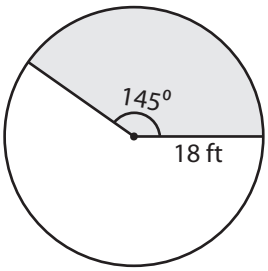
Area = _____

6)



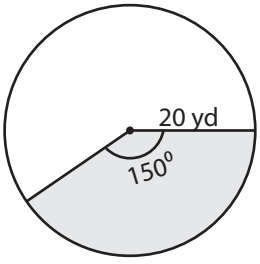
Area = _____

7)



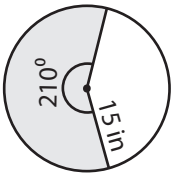
Area = _____

8)



Area = _____

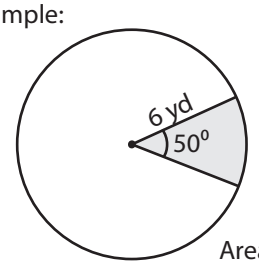
9)



Area = _____

Area of a Sector

Example:



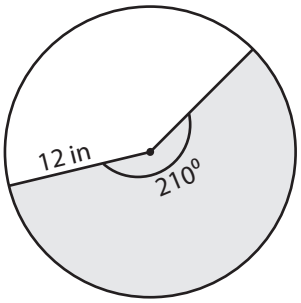
$$\text{Area of a sector} = \frac{\text{central angle}}{360^0} \times \pi \times \text{radius}^2 = \frac{\theta \times \pi \times r^2}{360^0}$$

$$= \frac{50^0 \times 3.14 \times 6 \times 6}{360^0}$$

$$= \mathbf{15.7\ yd^2}$$

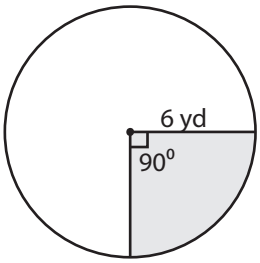
Find the area of each shaded region. Round the answer to two decimal places. (use π=3.14)

1)



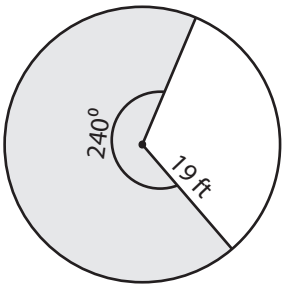
Area = **263.76 in²**

2)



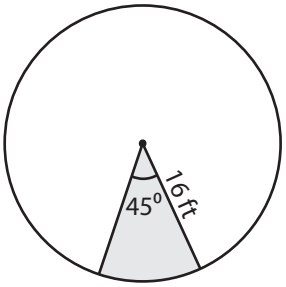
Area = **28.26 yd²**

3)



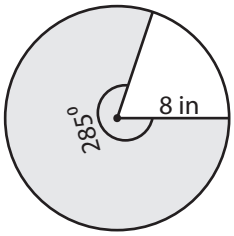
Area = **755.69 ft²**

4)



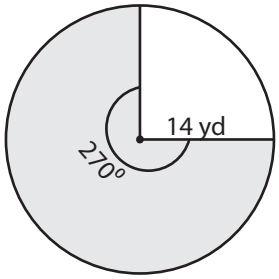
Area = **100.48 ft²**

5)



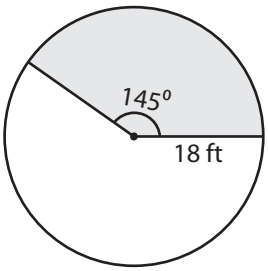
Area = **159.09 in²**

6)



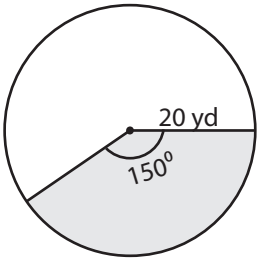
Area = **461.58 yd²**

7)



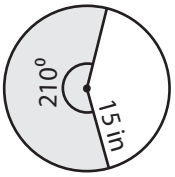
Area = **409.77 ft²**

8)



Area = **523.33 yd²**

9)



Area = **412.13 in²**

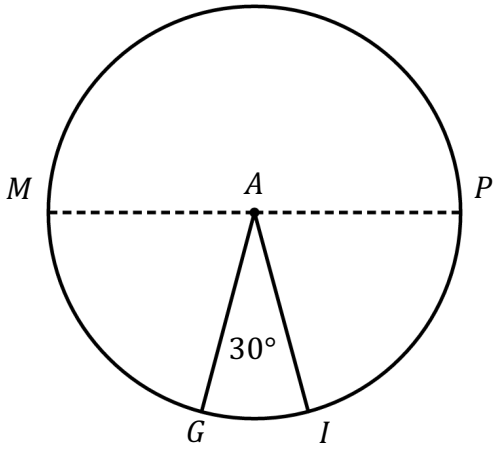
Name _____ Date_____

Area of Sectors of a Circle - Independent Practice

You do not have to print out or turn in this worksheet! Do the practice problems while you watch the video on my website!

1. The area of a sector with a radius of 14 yards is 38.28 square yards. Calculate the approximate angle of the sector. Round to the nearest tenth.

2. In the diagram below of circle A, diameter $MP = 26$, $m\angle GAI = 30°$ and radii $\overline{GA}$ and $\overline{AI}$ are drawn.



If $\widehat{MG} \cong \widehat{IP}$, find the area of the sector MAG in terms of π and approximated to the nearest hundredth.

If you have the internet, PLEASE click the link to these questions on my website.

Area of a Sector **FORMS QUESTIONS**

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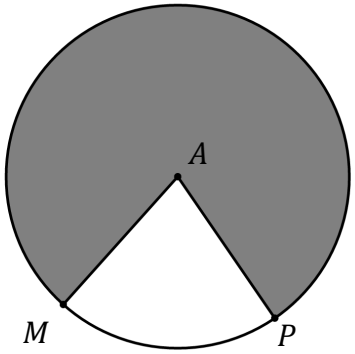
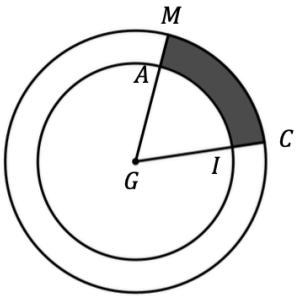
A circle has an 18-inch radius and a shaded sector with a central angle of $50°$. Determine the area of the shaded sector.

Consider circle A below.



Determine the area of the grey sector in the circle, if the measure of minor arc $\widehat{MP} = 80°$ and $MA = 32$ inches.

PaintsPlus LLC. specializes in circular paint jobs.
Their most recent job is modeled in the diagram below.



The two circles have center G, where radius $GI = 4$ feet, radius $MG = 6.5$ feet, and $m\angle MGC = 72°$. Determine the total cost be to paint area $MCAI$ if the quoted price is $\$40$ per square foot? Leave your answers in terms of π until calculating the cost and then round to the nearest dollar.

A $\$670$
B $\$680$
C $\$660$
D $\$620$

If you have the internet, please do this QUIZIZZ online. The link is on my website.

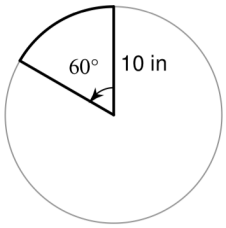
NAME : _____

CLASS : _____

DATE : _____

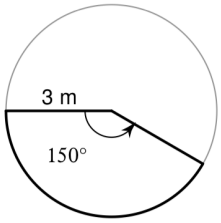
QUIZ REVIEW - Arc Measures, Arc Length & Area of a Sector

12 Questions

1. 

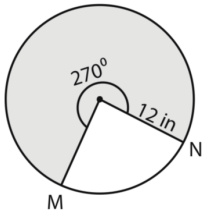
What's the area of the bold section that has a radius of 10 inches and a central angle of 60°? Use 3.14 for π.

- ☐ a) $52.3\ in^2$
- ☐ b) $5.2\ in^2$
- ☐ c) $10.5\ in^2$
- ☐ d) $261.7\ in^2$

2. 

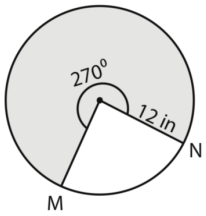
What's the area of the bold section that has a radius of 3 meters and a central angle of 150°? Leave your answer in terms of π.

- ☐ a) $67.82\ m^2$
- ☐ b) $11.78\ m^2$
- ☐ c) $7.85\ m^2$
- ☐ d) $3.93\ in^2$

3. 

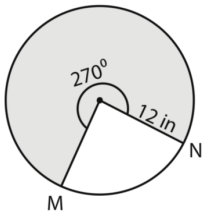
What's the area of the grey shaded region? Use 3.14 for π.

- ☐ a) $602.88\ in^2$
- ☐ b) $28.26\ in^2$
- ☐ c) $339.12\ in^2$
- ☐ d) $56.52\ in^2$

4. 

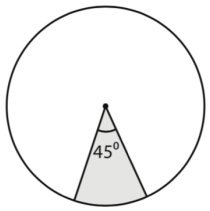
What's the area of the white region? Use 3.14 for π.

- ☐ a) $90\ in^2$
- ☐ b) $18.84\ in^2$
- ☐ c) $339.12\ in^2$
- ☐ d) $113.04\ in^2$

5. 

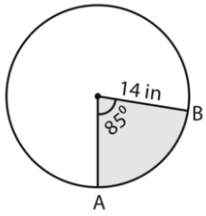
What's the length of minor arc MN? Keep your answer in terms of π.

- ☐ a) 6π
- ☐ b) 36π
- ☐ c) 18π
- ☐ d) 108π

6. 

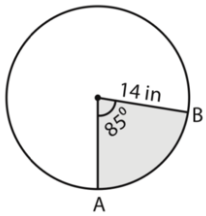
If the area of the grey sector is $100.48\ ft^2$, what is the radius of the circle?

- ☐ a) 803.84 feet
- ☐ b) 12.56 feet
- ☐ c) 16 feet
- ☐ d) 128 feet

7. 

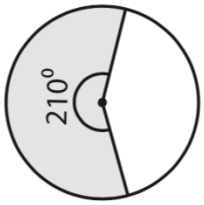
What's the area of the grey shaded region? Use 3.14 for π.

- ☐ a) $145.3in^2$
- ☐ b) $10.4in^2$
- ☐ c) $20.8in^2$
- ☐ d) $470.1in^2$

8. 

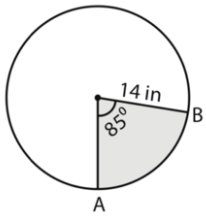
What's the area of the white region? Use 3.14 for π.

- ☐ a) $145.3in^2$
- ☐ b) $67.2in^2$
- ☐ c) $470.1in^2$
- ☐ d) $805.7in^2$

9. 

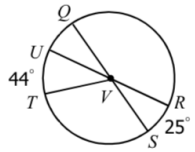
If the area of the grey sector is $412.13\ in^2$, what is the radius of the circle? Use 3.14 for π.

- ☐ a) 112.5 inches
- ☐ b) 225 inches
- ☐ c) 240.4 inches
- ☐ d) 15 inches

10. 

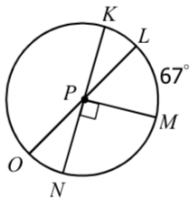
What is the length of the minor arc AB? Use 3.14 for π.

- ☐ a) 20.8 inches
- ☐ b) 145.3 inches
- ☐ c) 10.4 inches
- ☐ d) 372.4 inches

11. 

What is the measure of $\angle QVR$?

- ☐ a) 69°
- ☐ b) 70°
- ☐ c) 155°
- ☐ d) 136°

12. 

What is the measure of major arc LMK?

- ☐ a) 383°
- ☐ b) 337°
- ☐ c) 90°
- ☐ d) 157°

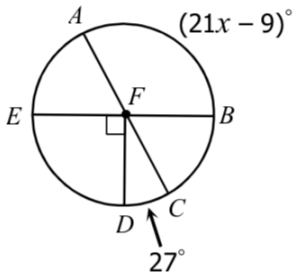
If you have the internet, PLEASE click the link to this quiz on my website.

Circles QUIZ: Central Angles, Arc Measures, Arc Length & Area of a Sector

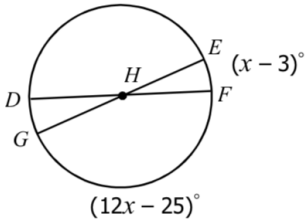
IF YOU HAVE THE INTERNET, CLICK THE LINK ON MY WEBSITE TO DO THIS QUIZ.

PLEASE DO NOT TURN THIS PAPER IN, IF YOU HAVE THE INTERNET!

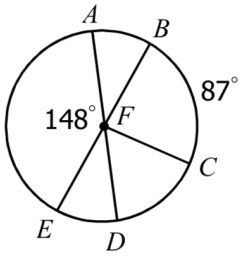
1. Find the measure of $\widehat{AB}$.



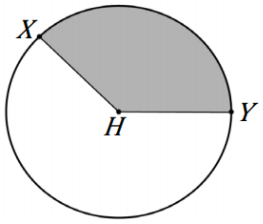
2. Find the measure of $\angle DHG$.



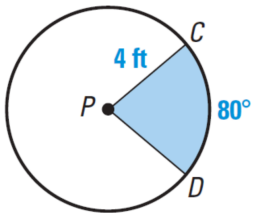
3. If $AF = 23$, find the length of $\widehat{EC}$.
   Use 3.14 for π.



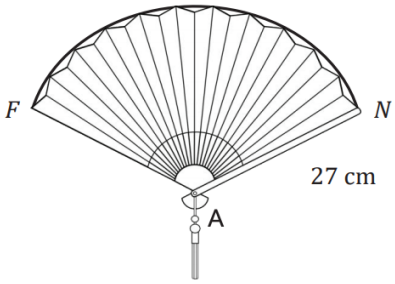
4. If $\angle XHY = 132°$ *and* $HY = 5\ cm$, what is the area of the shaded area? Use 3.14 for π.



5. What is the area of the white section of the circle below? Use 3.14 for π. Round your answer to the nearest tenth.

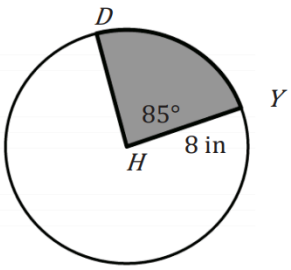


6. Find the length of $\widehat{FN}$, if $\angle FAN = 120°$. Use 3.14 for π. Round your answer to the nearest tenth.



EXTRA CREDIT

In Sarah's family, the birthday person always gets to cut the first piece of cake. Sarah is celebrating her birthday with both of her parents, her two brothers, and her best friend. She cuts her piece of birthday cake as shown by the sector below.

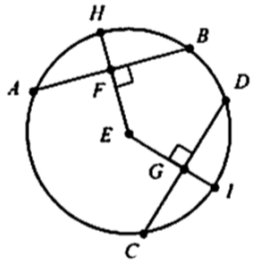


If the rest of the party equally shares the remaining portion of the cake, what is the approximate area that each one receives?

Ⓐ $30.718\ \text{in}^2$
Ⓑ $47.473\ \text{in}^2$
Ⓒ $153.589\ \text{in}^2$
Ⓓ $201.062\ \text{in}^2$

Congruent Arcs & Chords Notes/Practice

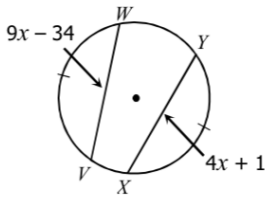
Congruent Chords & Arcs



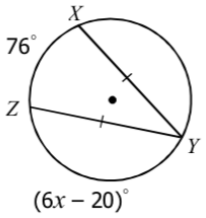
- Two chords are congruent if and only if:
  a) Their corresponding arcs are ≅
  $\overline{AB} = \overline{CD} \leftrightarrow \overset{\frown}{mAB} = \overset{\frown}{mCD}$
  b) They are equidistant from the center
  $AB = CD \leftrightarrow EF = EG$
- If a diameter or radius is perpendicular to a chord, then it bisects the chord and its arc.
  $\overline{EH} \perp \overline{AB} \rightarrow AF = FB$ and $\overset{\frown}{mAH} = \overset{\frown}{mHB}$

Directions: For #1-4, solve for x.

1.

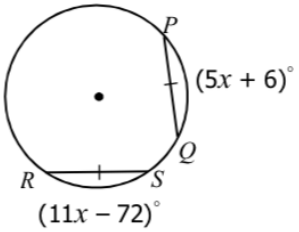


2.

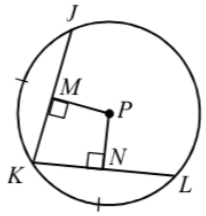


Directions: For #5-8, solve for the indicated arc or segment.

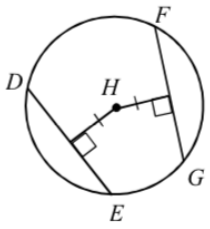
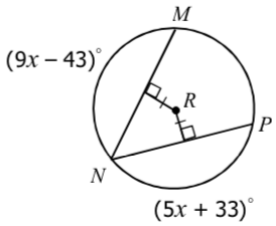
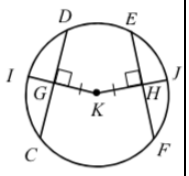
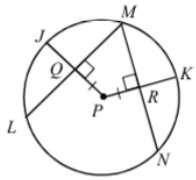
3. Find the measure of minor arc PQ.



4. If $MP = 5x - 34$ *and* $PN = 2x - 4$, find MP.



*YOU CAN SKIP THIS PROBLEM!

5. If $DE = 11x + 15$ and $FG = 32x - 27$, find FG.  	6. Find the measure of minor arc MP. 
7. If $\overset{\frown}{mCI} = (7x - 15)^\circ$ and $\overset{\frown}{mEF} = (12x - 8)^\circ$, find $\overset{\frown}{mCI}$.  	8. If $QM = 6X - 11$ and $MR = 2x + 9$, find the measure of arc MN. 

If you have the internet, PLEASE click the link to these questions on my website.

Congruent Chords & Arcs Notes/Practice **FORMS QUESTIONS**

IF YOU HAVE THE INTERNET, CLICK THE LINK ON MY WEBSITE TO DO THESE QUESTIONS.

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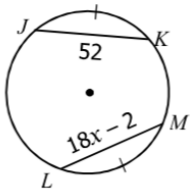
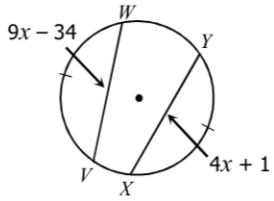
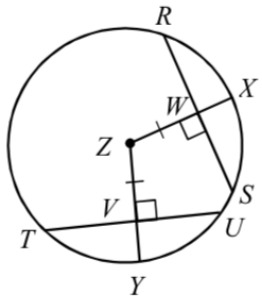
Solve for x.



Solve for x.



In circle Z, if $RS = 18$, and $m\overset{\frown}{TY} = 42^\circ$, find each measure.



$TV =$ _____

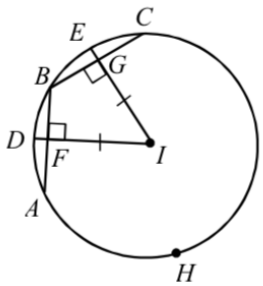
$TU =$ _____

$WS =$ _____

$m\overset{\frown}{YU} =$ _____

$m\overset{\frown}{RS} =$ _____

In circle I, if $BG = 17$, and $m\overset{\frown}{CHA} = 256^\circ$, find each measure.



$BC =$ _____

$FB =$ _____

$m\overset{\frown}{AB} =$ _____

$m\overset{\frown}{BC} =$ _____

$m\overset{\frown}{EC} =$ _____

If you have the internet, please do this QUIZIZZ online. The link is on my website.

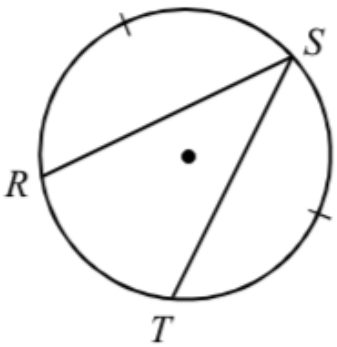
NAME : _____

CLASS : _____

DATE : _____

Congruent Chords & Arcs

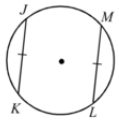
8 Questions

1. 

If $RS = 59$ and $ST = 10x - 31$, find x.

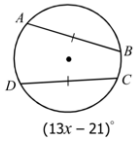
- ☐ a) x = 9
- ☐ b) x = 2.8
- ☐ c) x = 14.9
- ☐ d) x = 90

2. If $\overset{\frown}{mJK} = (7x - 39)^\circ$ and $\overset{\frown}{mML} = 87^\circ$, find x.



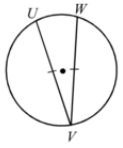
- ☐ a) x = 6.9
- ☐ b) x = 18
- ☐ c) x = 11.8
- ☐ d) x = 17

3. If $\overset{\frown}{mAD} = 85^\circ$ and $\overset{\frown}{mBC} = 31^\circ$, find the value of x.



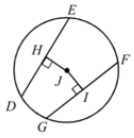
- ☐ a) x = 4
- ☐ b) x = 7.8
- ☐ c) x = 11
- ☐ d) x = 20.4

4. If $\overset{\frown}{mUV} = (8x - 17)^\circ$ and $\overset{\frown}{mWV} = (5x + 52)^\circ$, find $\overset{\frown}{mWV}$.



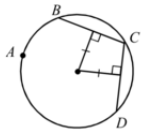
- ☐ a) 23°
- ☐ b) 167°
- ☐ c) 110.5°
- ☐ d) 78.5°

5. If $DE = GF$, $HJ = 3x + 20$ and $JI = 15x - 64$, find JI.



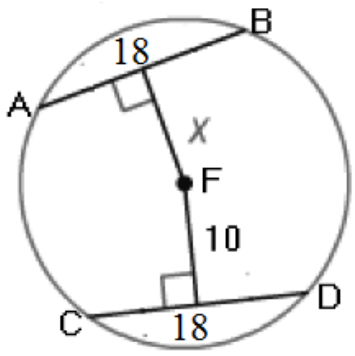
- ☐ a) 7
- ☐ b) 41
- ☐ c) 6.5
- ☐ d) 22

6. If $\overset{\frown}{mBC} = (9x - 53)^\circ$ and $\overset{\frown}{mCD} = (2x + 45)^\circ$, find $\overset{\frown}{mBAD}$.



- ☐ a) 14°
- ☐ b) 73°
- ☐ c) 146°
- ☐ d) 214°

7. Find x



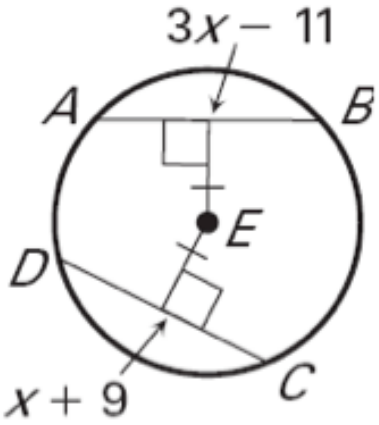
☐ a) 10

☐ b) 5

☐ c) 18

☐ d) 9

8. Find the value of x.



☐ a) 10

☐ b) 181

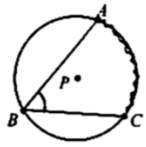
☐ c) 34

☐ d) 40

You do not have to print out or turn in this worksheet! Do the practice problems while you watch the video on my website!

Inscribed Angles Notes/Practice Name: _____

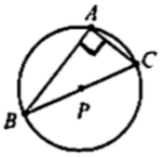
Inscribed Angles



$m\angle ABC = \frac{1}{2} m\overset{\frown}{AC}$

- An **inscribed angle** is an angle with its vertex on the circle with two sides that are chords.
- An **intercepted arc** is the arc that lies between the endpoints of an inscribed angle.
- The **degree of the inscribed angle** is equal to half the measure of its **intercepted arc**.

Intercepting a Diameter



If an inscribed angle **intercepts a diameter**, then then it is a right angle.

$m\angle BAC =$ 90°

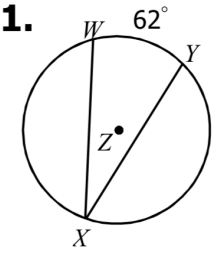
Overlapping Arcs

If two inscribed angles intercept the **same arc**, then the angles are congruent.

$m\angle ABD =$ m∠ACD

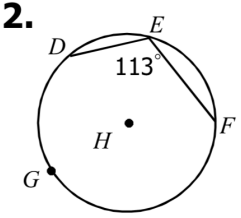
Directions: Find the measures of the angles and arcs below.

1.



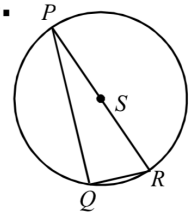
$m\angle WXY =$ _____

2.



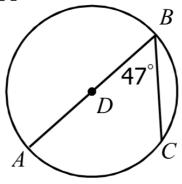
$m\overset{\frown}{DGF} =$ _____

3.



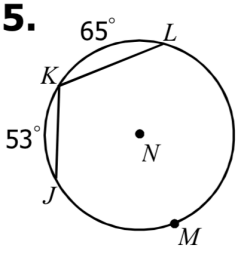
$m\angle PQR =$ _____

4.



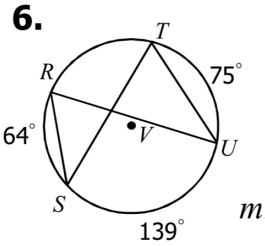
$m\overset{\frown}{BC} =$ _____

5.



$m\angle JKL =$ _____

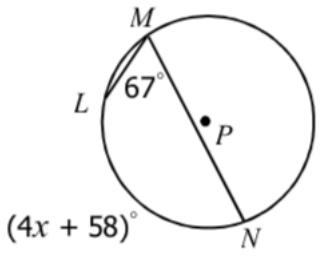
6.



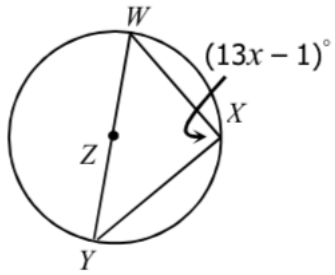
$m\angle RST =$ _____

$m\angle RUT =$ _____

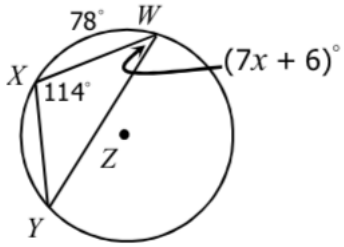
7. Solve for x.



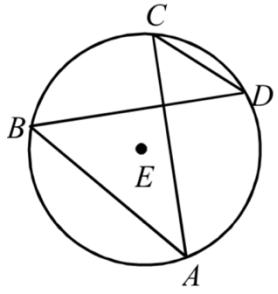
8. Solve for x.



9. Solve for x.



10. If $m\angle ABD = (6x + 26)^\circ$ and $m\angle ACD = (13x - 9)^\circ$, find $m\overset{\frown}{AD}$.



If you have the internet, PLEASE click the link to these questions on my website.

Inscribed Angles **FORMS QUESTIONS**

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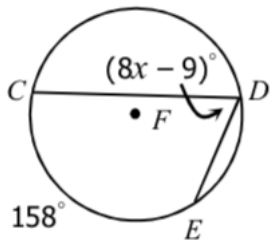
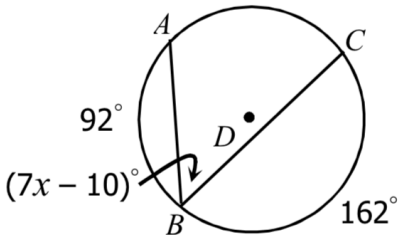
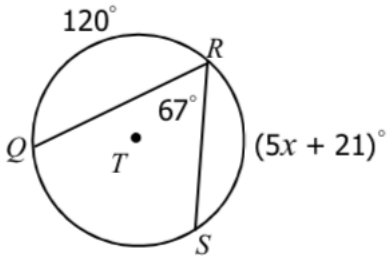
Solve for x.



Solve for x.



Solve for x.



If $m\angle FGH = (6x + 21)^\circ$ and $m\overset{\frown}{FJH} = (17x - 28)^\circ$, find $m\overset{\frown}{FJH}$.