Geometry Unit 10 Note Sheets 2018

Date	Name of Lesson	
	10.1 Circles and Circumference	
	10.2 Measuring Angles and Arcs Part 1	
	10.2 Measuring Angles and Arcs Part 2	
	10.3 Arcs and Chords	
	Quiz 1	
	10.4 Inscribed Angles	
	10.5 Tangents	
	Quiz 2	
	Circles Review (if needed)	
	10.6 Secants, Tangents, and Angle Measures	
	Review of Secants, Tangents, and Angle Measures (if needed)	
	Quiz 3	
	Constructing Circumscribed and Inscribed Figures	
	11.3 Area of Circles and Arc Lengths	
	Practice Test	
	Unit 10 Test	

Circles and Circumference Notes

Special Segments in a Circle	
radius	
chord	
diameter	

Guided Practice
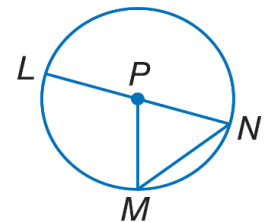1. Use the circle to the right to find the below parts:

Name of Circle   _____

Radius   _____

Chord   _____
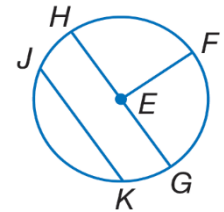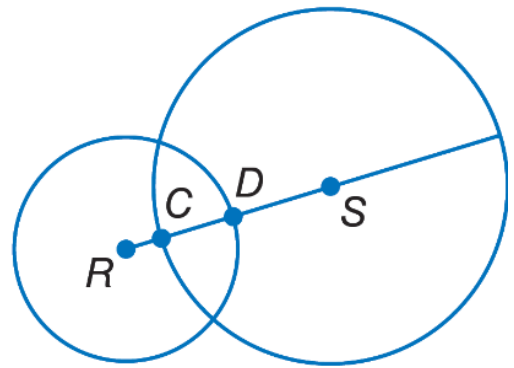
Diameter   _____

Your Turn
2. Use the circle to the right to find the below parts:

Name of Circle   _____

Radius   _____

Chord   _____

Diameter   _____

Radius and Diameter Relationships

Circle Pairs	
Congruent Circles	Concentric Circles

Guided Practice

3. **The diameter of $\odot S$ is 30 units, the diameter of $\odot R$ is 20 units, and $DS = 9$ units. Find CD.**

Your Turn

4. The diameter of $\odot X$ is 22 units, the diameter of $\odot Y$ is 16 units, and $WZ = 5$ units. Find XY.
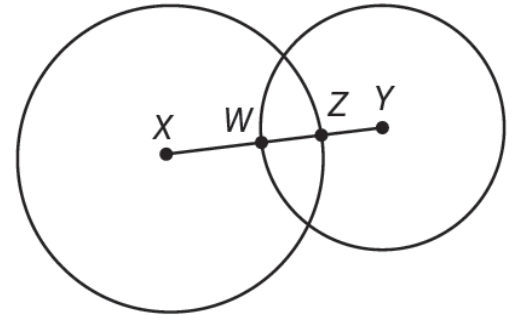
Circumference

Guided Practice

5. Find the circumference of a circle with radius of 64.6 cm

6. Find the circumference of a circle with the diameter of 87.3 in.

Your Turn

7. Find the circumference of a circle with the radius 97.2 ft.

8. Find the circumference of a circle with the diameter of 12.35 m.

Guided Practice

9. Given the circumference of a circle is 345 in., find the diameter and radius.

Your Turn

10. Given the circumference of a circle is 19.4 ft., find the diameter and radius.

Measuring Angles and Arcs Notes

Sum of Central Angles
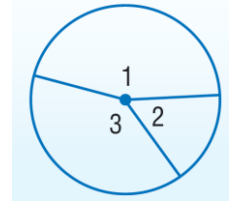
Guided Practice
1. Find the value of x.
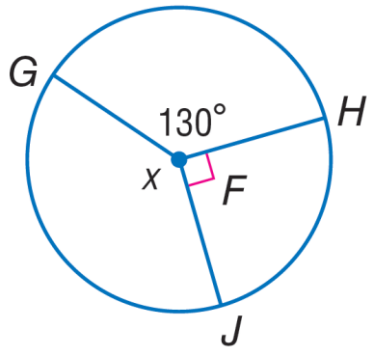
Your Turn
2. Find the value of x.
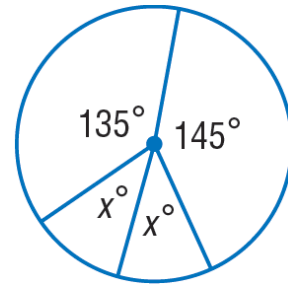
Arc
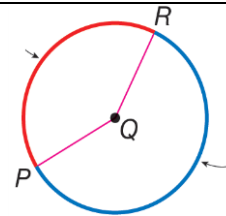
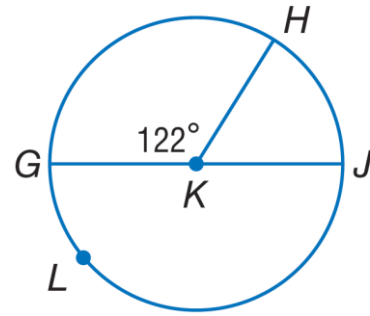| Arcs and Arc Measures	
Minor Arc	
Major Arc	
Semicircle	

4
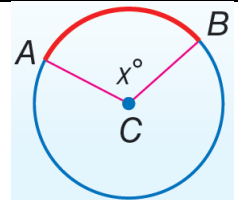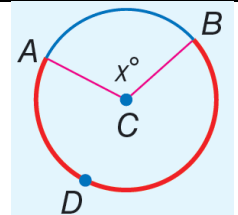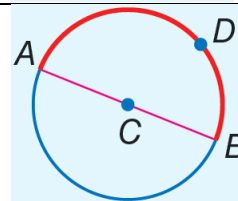
Guided Practice

$\overline{GJ}$ is the diameter of $\odot K$. Identify each arc as a *major arc*, *minor arc*, or *semicircle*. Then find the measure.

3. $m\overarc{GH}$

4. $m\overarc{GLH}$

Your Turn

$\overline{WC}$ is a radius of $\odot C$.

Identify each arc as a *major arc, minor arc,* or *semicircle*.

Then find its measure.

5. $m\overarc{XZY}$

6. $m\overarc{WZX}$

7. $m\overarc{XW}$
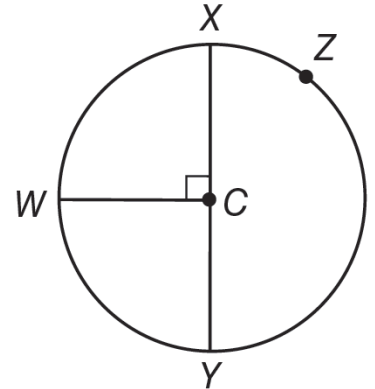
Guided Practice

Refer to the circle graph. Find each measure.

8. $m\overarc{CD}$

9. $m\overarc{BC}$

Female Participation in Sports
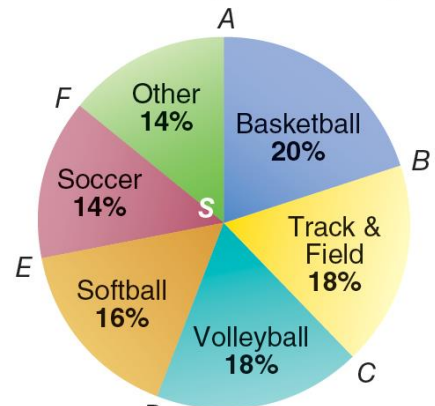
Your Turn

Refer to the circle graph. Find each measure.

10. $m\overarc{KL}$

11. $m\overarc{NJL}$

Bicycles Bought (by type)

5

Measuring Angles and Arcs Part 2 Notes
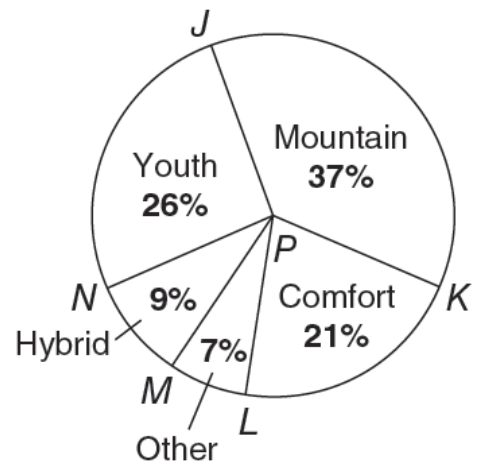
Your Turn

1.
RESTAURANTS The graph shows the results
of a survey taken by diners relating what
is most important about the restaurants
where they eat.

 a. Find $m\widehat{AB}$.

 b. Find $m\widehat{BC}$.

 c. Describe the type of arc that the
 category Great Food represents.

What Diners Want

Quick Service 8% B C

Reasonable Prices 22%

Great Food 56%

Don't Know 3% A E

Atmosphere 11% D
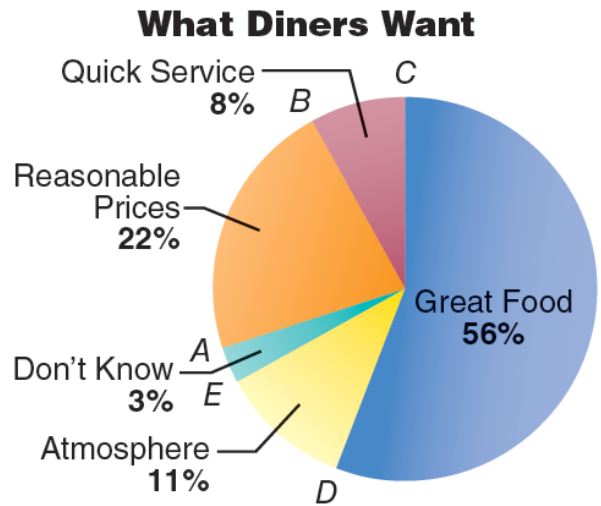
Vocabulary

Adjacent Arcs _____

Arc Addition Postulate

Z
Y
X
• W

Guided Practice

Find the measure in $\odot F$.

2. $m\widehat{AED}$

3. $m\widehat{ADB}$

B   C
D
F
63°
A   E
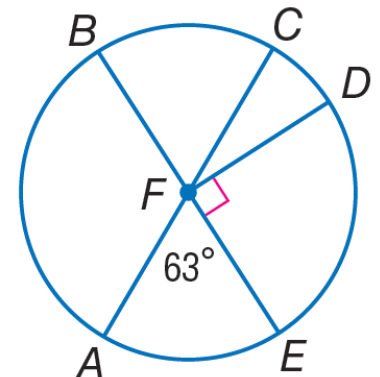
Your Turn

4. $m\widehat{ABD}$

Arc Length
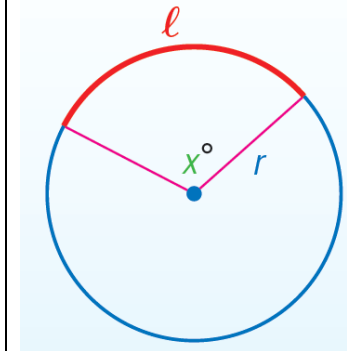
NOTE: There is a difference between the measure of an Arc and the Arc Length!

<u>Guided Practice</u>

Find the length of $\overset{\frown}{ZY}$. Round to the nearest hundredth.

5.

6.
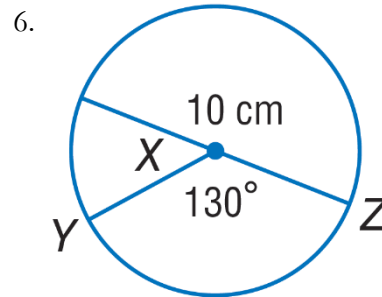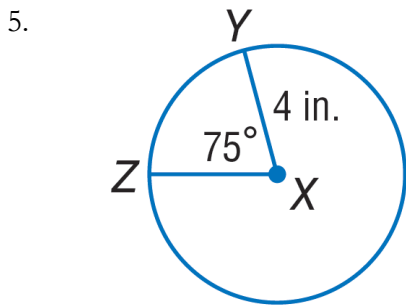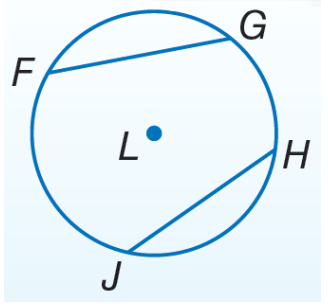
<u>Your Turn</u>

Find the length of $\overset{\frown}{DA}$. Round to the nearest hundredth.

7.

8.
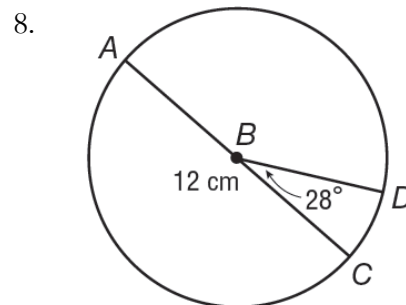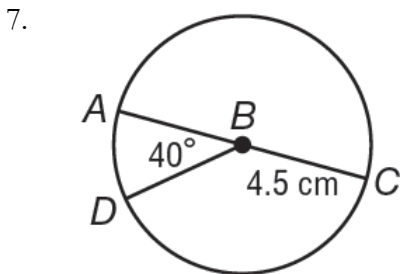
Arcs and Chords Notes

Theorem

Guided Practice
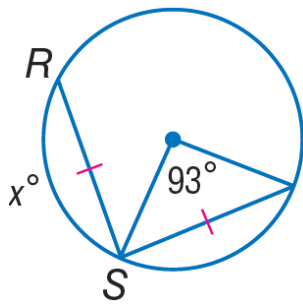
1. Find the value of x.

Your Turn
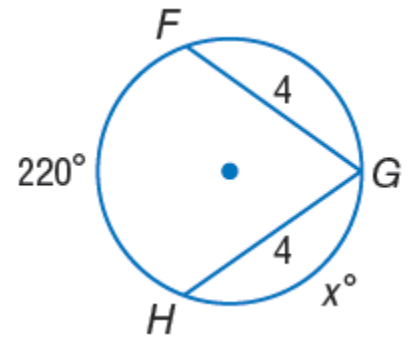
2. Find the value of x.

Guided Practice

3. Find the value of x.
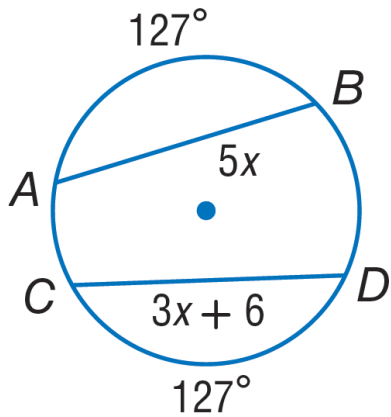
Your Turn

4. Find the value of x.
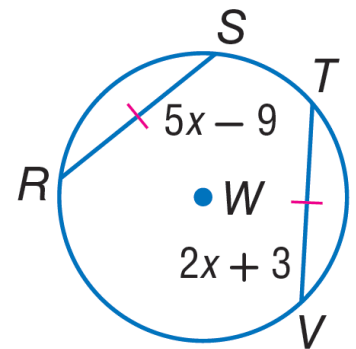
8

Theorem	

Guided Practice

5. In ⊙S, $m\widehat{PQR} = 98$. Find $m\widehat{PQ}$.
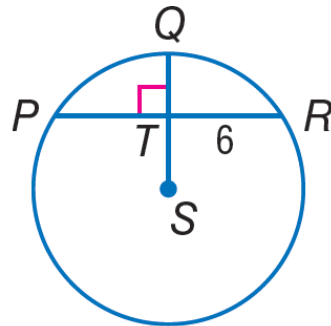
6. In ⊙S, find PR.

Your Turn

7. In ⊙G, $m\widehat{DEF} = 150$. Find $m\widehat{DE}$.
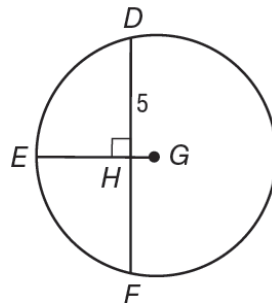
Theorem	

Guided Practice

8. In ⊙A, $WX = XY = 22$. Find AB.
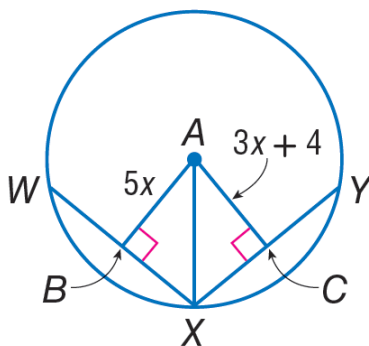
Your Turn

9. In ⊙P, $EF = GH = 24$. Find PQ.

9
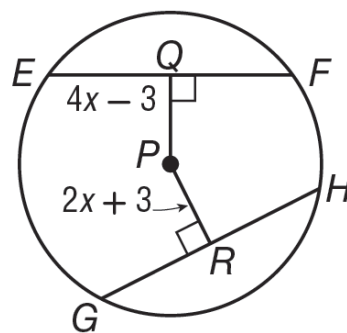
Inscribed Angles Notes
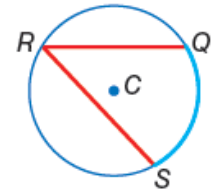
Vocabulary:

Inscribed Angle _____

Intercepted Arc _____

Three ways that an angle can be inscribed in a circle.		
$P \bullet$	$P \bullet$	$P \bullet$
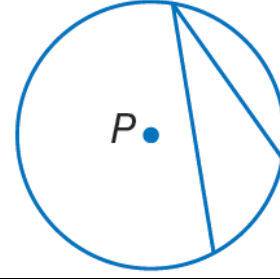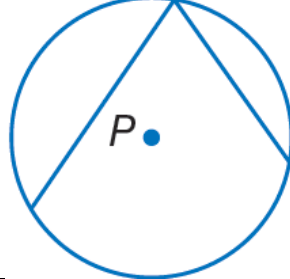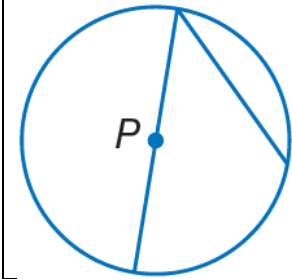
Inscribed Angle Theorem
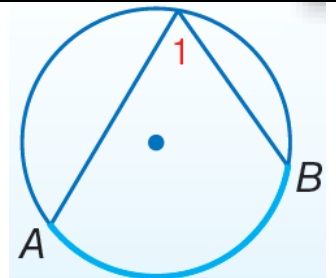
Guided Practice
Find each measure.

1. $m\angle P$

2. $m\widehat{PO}$

Your Turn

3. $m\widehat{CF}$

4. $m\angle C$

10
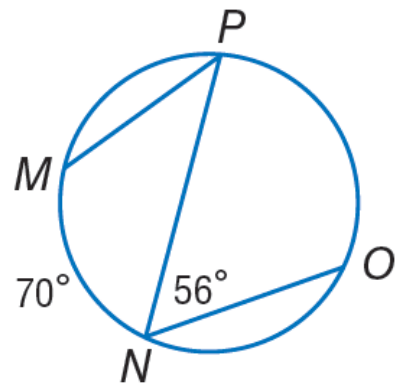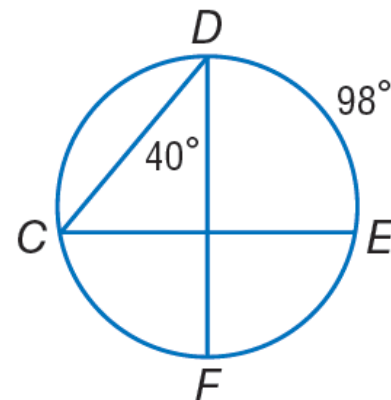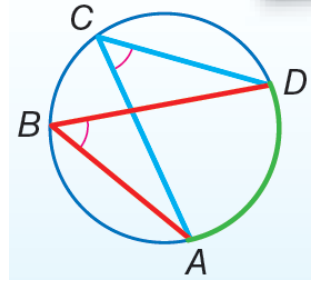
Theorem

Guided Practice

5. **Find $m\angle T$.**

$(3x - 5)°$

$(2x + 15)°$

Your Turn

6. Find $m\angle R$.

$(12x - 13)°$

$(9x + 2)°$
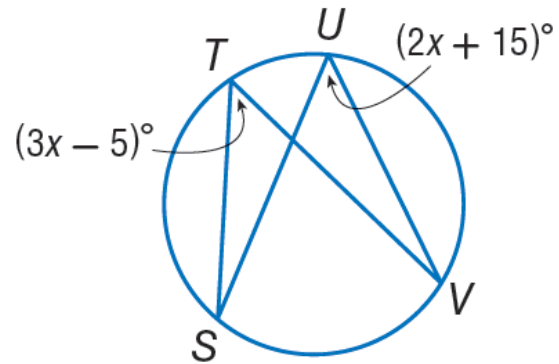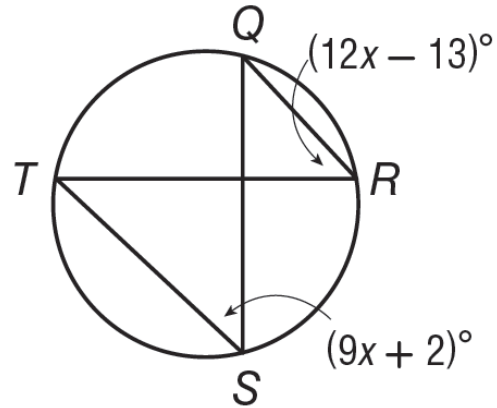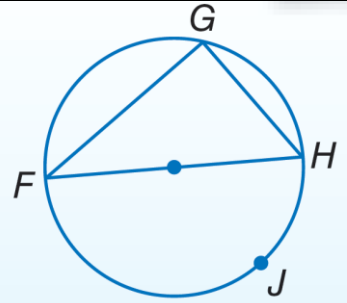
Theorem	
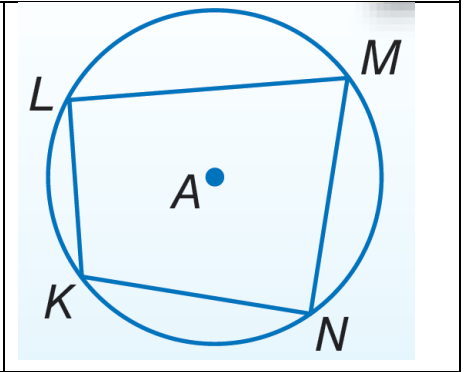
Guided Practice

1. Find $m\angle F$.
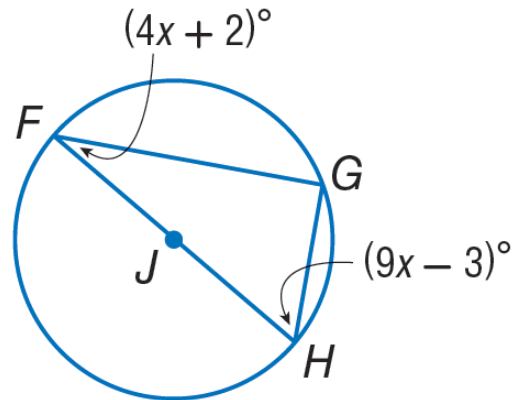
Your Turn

2. Find $m\angle C$.
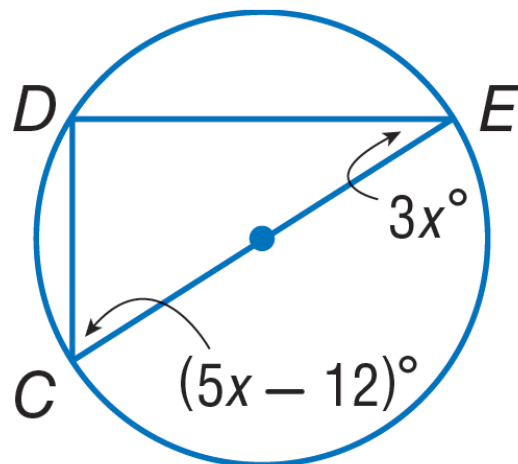
Theorem	

Guided Practice

4. Quadrilateral $WXYZ$ is inscribed in $\odot V$. Find $m\angle X$ and $m\angle Y$.
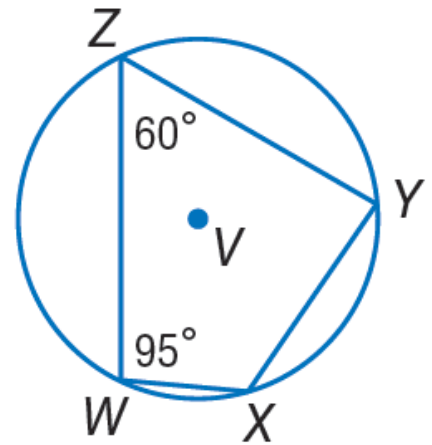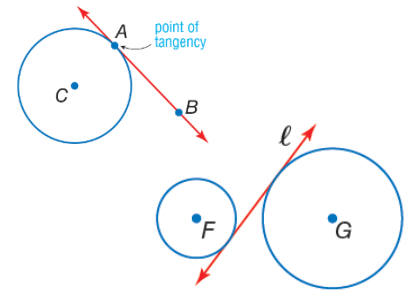

Your Turn

5. Find $m\angle S$ and $m\angle T$.
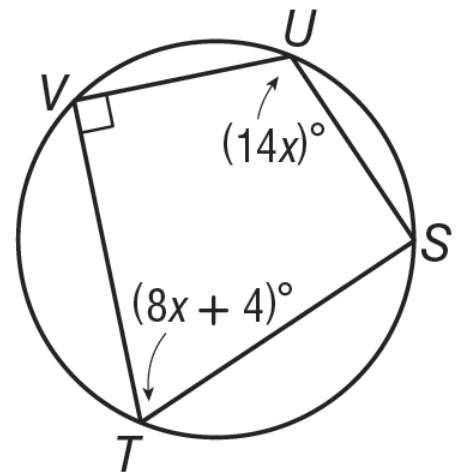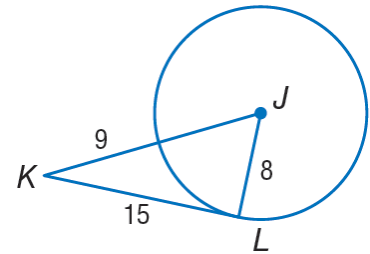
Tangents Notes

Vocabulary

Tangent _____

Point of Tangency _____

Common Tangent _____

Theorem	

Guided Practice

1. $\overline{JL}$ is a radius of $\odot J$. Determine whether $\overline{KL}$ is tangent to $\odot J$. Justify your answer.

2. $\overline{JH}$ is tangent to $\odot G$ at J. Find the value of x.
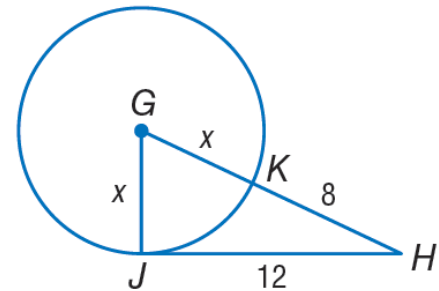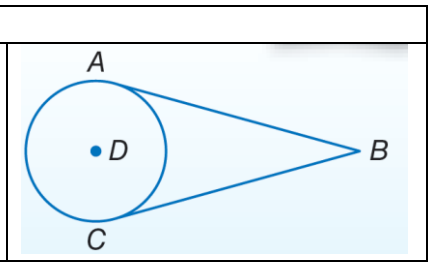
Your Turn

3. Determine whether $\overline{GH}$ is tangent to $\odot F$. Justify your answer.
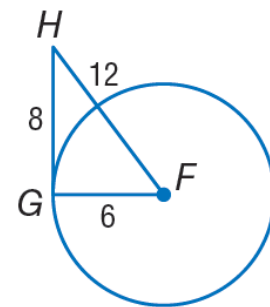
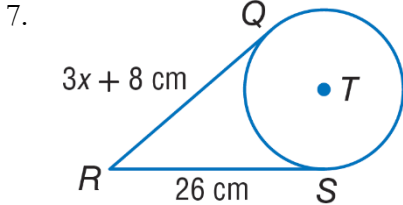**Find the value of x. Assume that segments that appear to be tangent are tangent.**

4.

5.

14
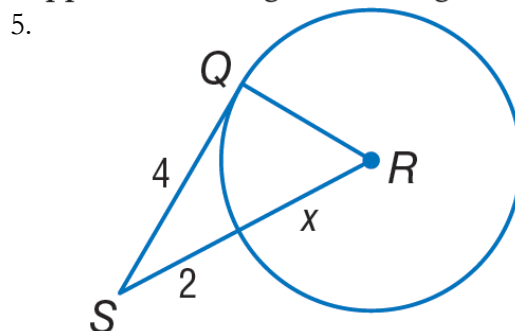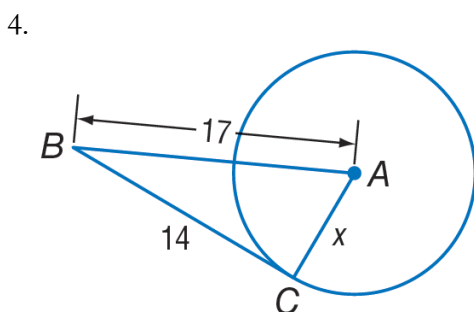
Theorem	

Guided Practice

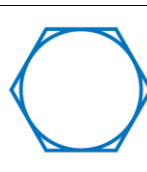Find the value of x. Assume that segments that appear to be tangent are tangent.

6.

$x + 15$

$2x - 5$
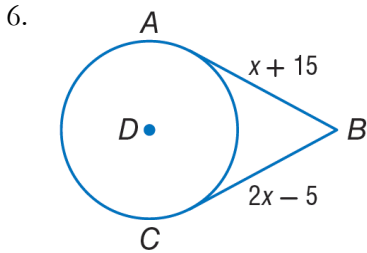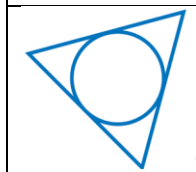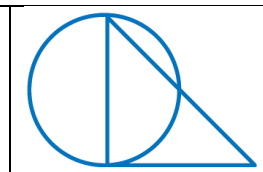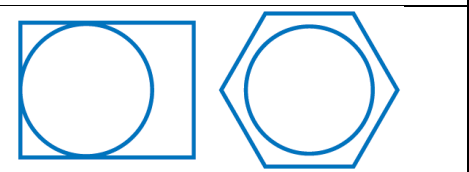
Your Turn

Find the value of x. Assume that segments that appear to be tangent are tangent.

7.

$3x + 8$ cm

26 cm

Circumscribed Polygons	

Guided Practice

Quadrilateral *RSTU* is circumscribed about ⊙*J*.

8. If the perimeter is 18 units, find *x*.
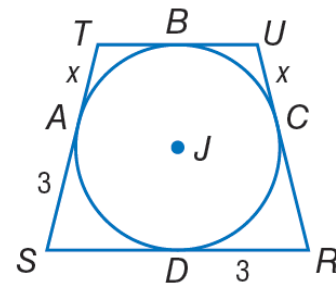
Your Turn
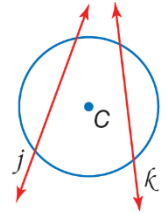
Triangle *JKL* is circumscribed about ⊙*R*.

9. Find x.

10. Find the perimeter of Δ*JLK*.

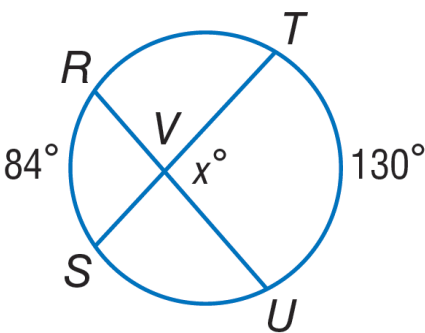
$x + 3$

$4x - 9$

15
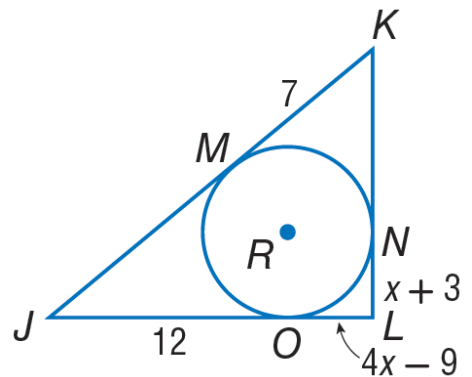
Secants, Tangents, and Angle Measures Notes

Vocabulary

Secant _____
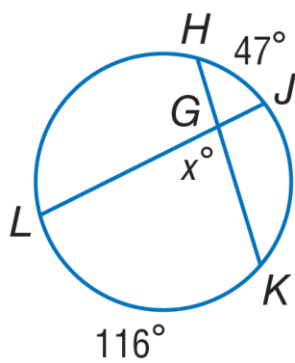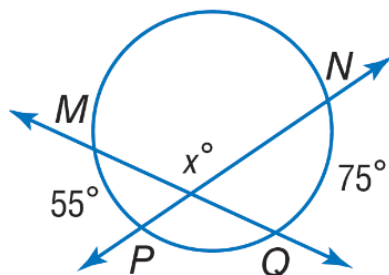
Theorem

Guided Practice

Find x.

1.

$84°$ ... $x°$ ... $130°$

2.

$75°$ ... $x°$ ... $143°$

3.

$x°$ ... $110°$ ... $97°$

Your Turn

4.

$47°$ ... $x°$ ... $116°$

5.

$55°$ ... $x°$ ... $75°$

6.

$154°$ ... $128°$ ... $x°$
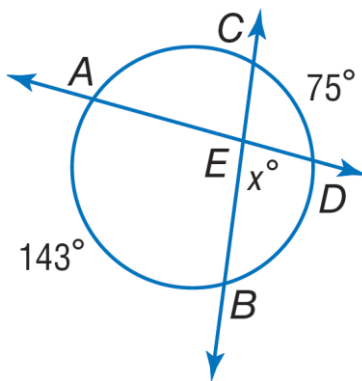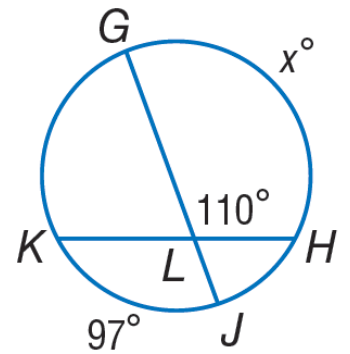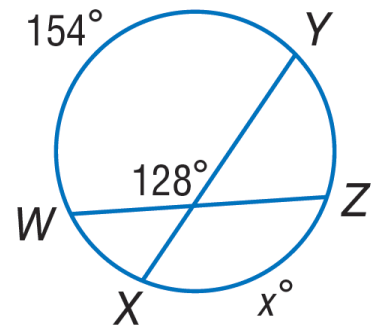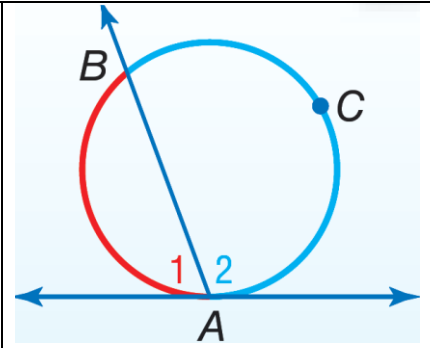
Theorem	

<u>Guided Practice</u>
Find each measure.
7. $m\angle QPR$

8. $m\widehat{DEF}$
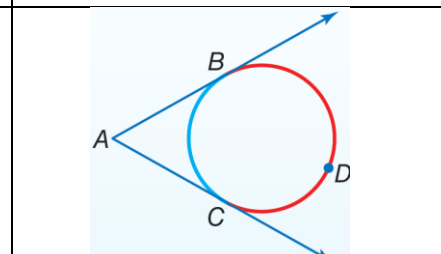
<u>Your Turn</u>
9. $m\angle QPS$

10. $m\widehat{BCD}$

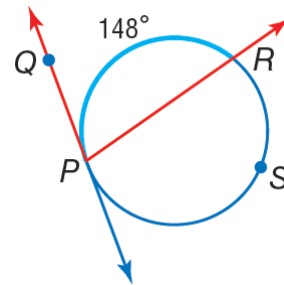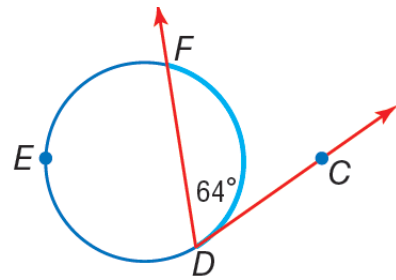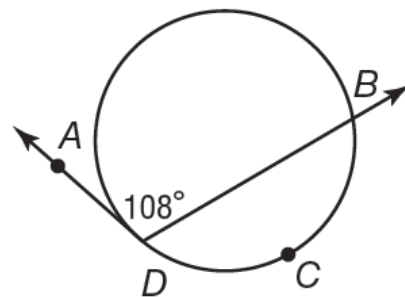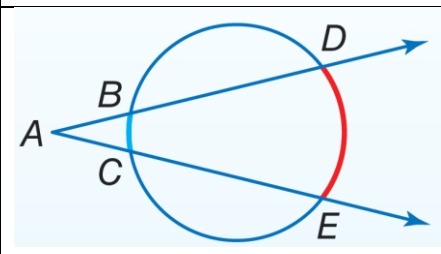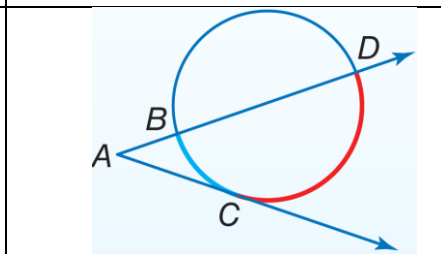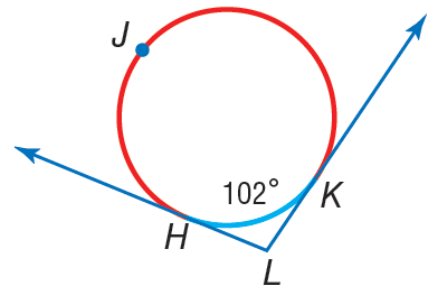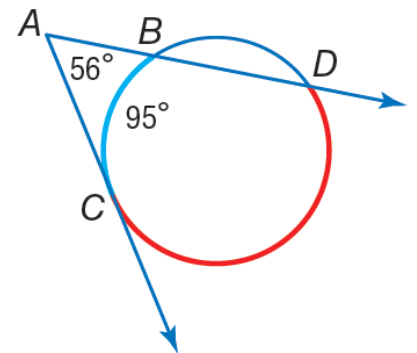| Theorem		
Two Secants	Secant-Tangent	Two Tangents

<u>Guided Practice</u>
Find each measure.

1. $m\angle L$

2. $m\overarc{CD}$

3. $m\overarc{XZ}$
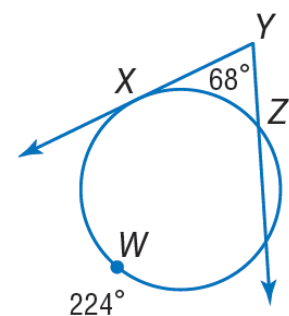
18

<u>Your Turn</u>

1. $m\overset{\frown}{BC}$
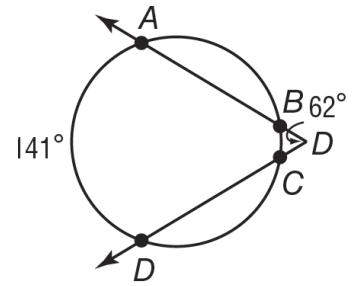
2. $m\overset{\frown}{XYZ}$
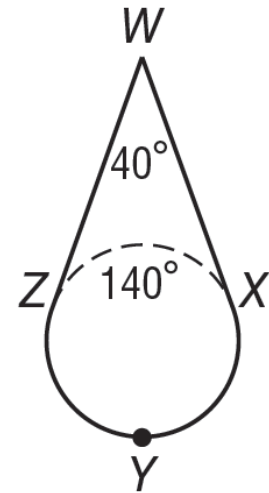
Circle and Angle Relationship Review		
on the circle		
inside the circle		
outside the circle		

Constructing Circumscribed and Inscribed Figures Notes

Vocabulary

Circumscribed _____
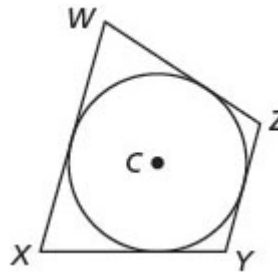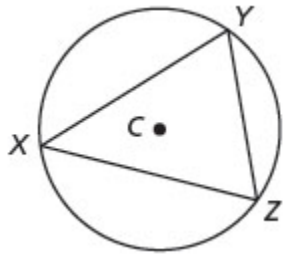
Review:

Construct a perpendicular bisector of the line.

To construct a circumcircle (or to circumscribe the triangle) of a triangle you will have to find the center of the circle.
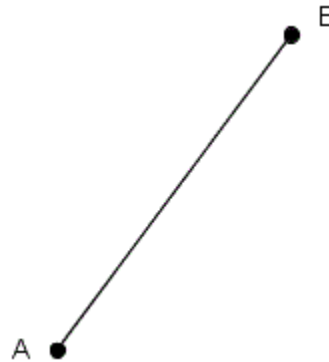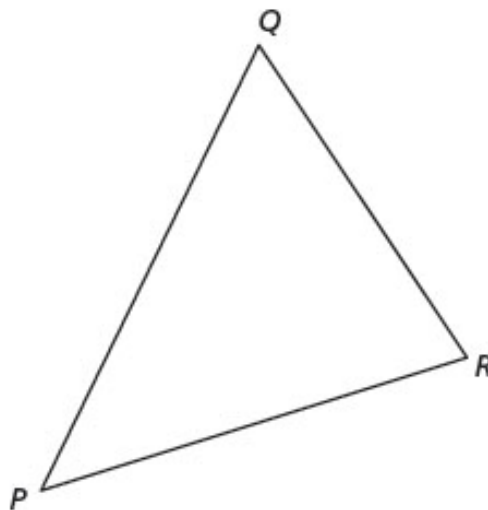
The circumcircle will need to pass through points P, Q and R. So the center of the circle must be equidistant from all three points. To find this we will construct _____ _____ from two of the sides
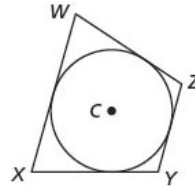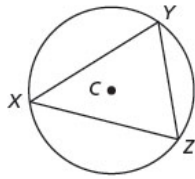

Once the center is found you can put your compass on the center (point C) and measure out to any of the points P, Q or R to find the distance and then draw the circle.
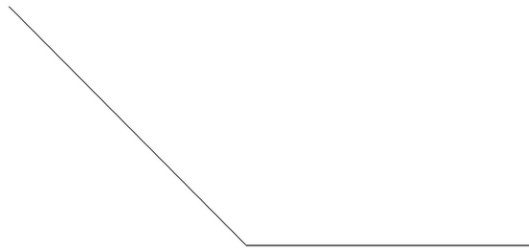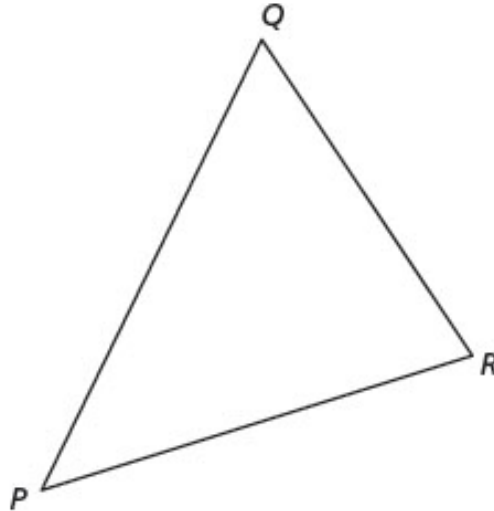
Vocabulary

Inscribed _____

Review:

Construct the angle bisector.

To inscribe a circle in a figure we have to find a point equidistant from each side and will have to use a different method.
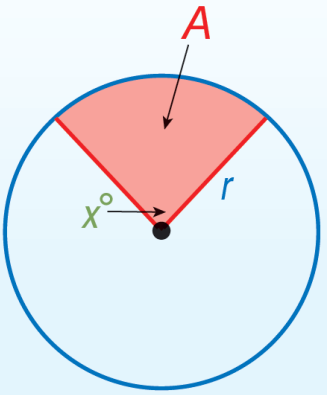
The inscribed circle must be equidistant from each side of the triangle. To find these points we will construct

_____ _____ of two of the angles.

Now that you have what will become the center of the circle you can put the tip of your compass on the center point C and then the pencil on the a side where the angle bisector goes through the opposite side of the triangle.
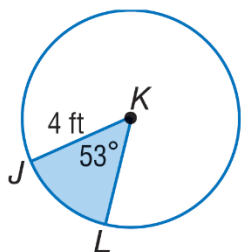
11.3 Area of Sectors of Circles Notes Sheet
Reminder – Formula for Area of a circle:

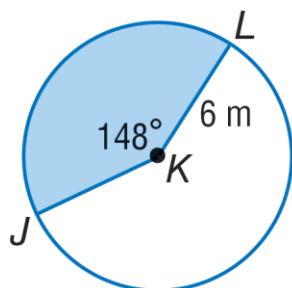| Area of a Sector	

Guided Practice
Find the area of each shaded section. Round to the nearest tenth, if necessary.
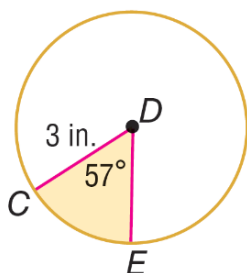
1.

2.

Your Turn
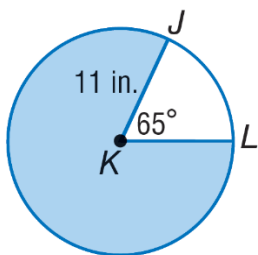
3.

Geometry Unit 10 Note Sheets 2018
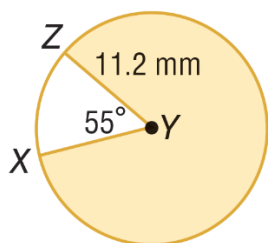<u>Guided Practice</u>
4.

<u>Your Turn</u>
5.

<u>Guided Practice</u>
6. A circular pizza has a diameter of 12 inches and is cut into 8 congruent slices. What is the area of one slice to the nearest hundredth?

<u>Your Turn</u>
7. A pie has a diameter of 9 inches and is cut into 10 congruent slices. What is the area of one slice to the nearest hundredth?