

## Lesson 11-8L Mixed Angles Practice

### AGENDA:

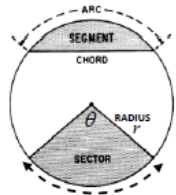
- Check & Review Homework 11-7
- Practice Problem
- Quiz
- Work independently on the rest of the problems

### HOMEWORK:

- Finish the problems as worksheet 11-8

11-4

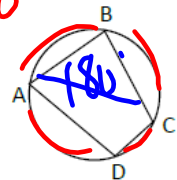
#### Central Angle Proportions: Sector Area / Arc Length / Radian Measure



Sector Area	Arc Length	Radian Measure
$\frac{\theta^\circ}{360^\circ} = \frac{\text{SECTOR AREA}}{\text{AREA}}$	$\frac{\theta^\circ}{360^\circ} = \frac{\text{ARC LENGTH}}{\text{CIRCUMF}}$	$\frac{\theta^\circ}{360^\circ} = \frac{\theta \text{ RADIAN}}{2\pi \text{ RADIAN}}$

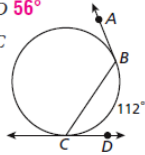
#### Other Geometric Relationships in a Circle:

- Arc Addition Postulate: Example  $m\widehat{AB} + m\widehat{BC} + m\widehat{CD} + m\widehat{DA} = 360^\circ$
- In an inscribed quadrilateral in a  $\odot$ , opposite  $\angle$ 's are SUPPLEMENTARY  
 Example:  $m\angle A + m\angle C = 180^\circ$

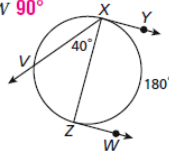


Homework 11-5 P. 787 #16-20,23,24,25,27,28,31-33

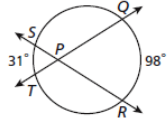
16.  $m\angle BCD$   $56^\circ$   
 17.  $m\angle ABC$   $124^\circ$



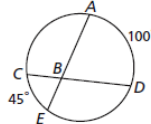
18.  $m\angle XZW$   $90^\circ$   
 19.  $m\widehat{XZV}$   $260^\circ$



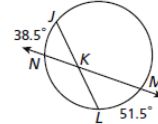
20.  $m\angle QPR$   $64.5^\circ$



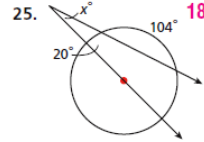
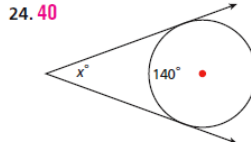
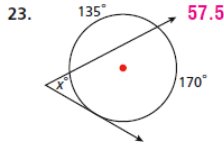
21.  $m\angle ABC$   $107.5^\circ$



22.  $m\angle MKJ$   $135^\circ$

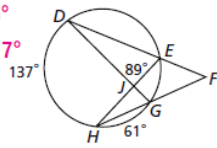


Find the value of  $x$ .



27.  $m\widehat{EG}$   $45^\circ$

28.  $m\widehat{DE}$   $117^\circ$

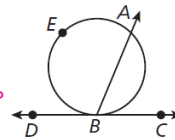


In the diagram,  $m\angle ABC = x^\circ$ . Write an expression in terms of  $x$  for each of the following.

31.  $m\widehat{AB}$   $2x^\circ$

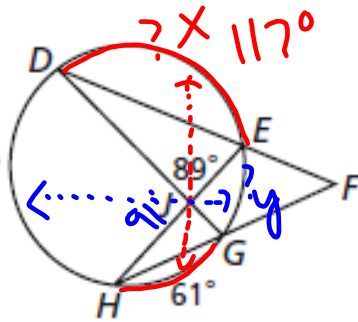
32.  $m\angle ABD$   $(180 - x)^\circ$

33.  $m\widehat{AEB}$   $(360 - 2x)^\circ$



27.  $m\widehat{EG}$   $45^\circ$

28.  $m\widehat{DE}$   $117^\circ$



$$m\angle DJE = \frac{1}{2}(\widehat{DE} + \widehat{HG})$$

$$89^\circ = \frac{1}{2}(x + 61^\circ)$$

$$2(89) = x + 61$$

$$178 = x + 61$$

$$-61$$


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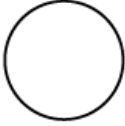

$$117 = x$$

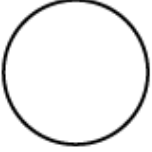
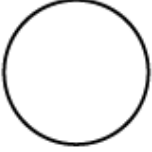
$$91^\circ = \frac{1}{2}(137^\circ + y)$$

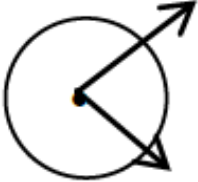
ARC ADD POST

$$137^\circ + 117^\circ + 61^\circ = 360^\circ$$

$$+ y$$

<b>Angle and arc Relationships</b>	Outside circle	*Graphic Organizer (front)*
Example		
∠ Name		
∠ rays are		
Measurements relationship	$m\angle = \frac{1}{2}(m_{large} - m_{small})$ Angle measure = 1/2 difference of arcs	

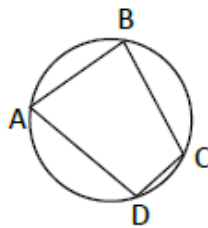
	∠ Vertex is located:	
	On circle	Inside circle
		
∠ Name		Interior
∠ rays are	Chords/secants/(1 tangent) sharing an endpoint	
Measurements relationship		

	Center of circle
	
∠ Name	
∠ rays are	
Measurements relationship	

\*Graphic Organizer  
(front)\*

In an inscribed quadrilateral in a  $\odot$ , opposite  $\angle$ 's are \_\_\_\_\_.

Example: \_\_\_\_\_



\*Graphic Organizer (back)\*

<i>Inscribed Angles</i>	<ul style="list-style-type: none"> <li>If an <math>\angle</math> is inscribed in a semi circle <math>\rightarrow</math> it is a right <math>\angle</math></li> </ul>	
	<ul style="list-style-type: none"> <li>If two inscribed <math>\angle</math>'s intercept the same arc <math>\rightarrow</math> the <math>\angle</math>'s are <math>\cong</math></li> </ul>	
	<ul style="list-style-type: none"> <li>If two inscribed <math>\angle</math>'s intercept <math>\cong</math> arcs <math>\rightarrow</math> the <math>\angle</math>'s are <math>\cong</math></li> </ul>	
	<ul style="list-style-type: none"> <li>If a quadrilateral is inscribed in a circle <math>\rightarrow</math> Opposite <math>\angle</math>'s are supplementary</li> </ul>	

• Be sure your Graphic Organizer is complete for Angle-Arc Relationships.

Try the following, finding the measures of all numbered angles. Lines that appear to be tangents and chords that appear to be diameters are.

Example:

$18^\circ = \frac{1}{2} m \widehat{ARC}$   
 $36^\circ = m \widehat{ARC}$

$m\angle X = \frac{1}{2} m \widehat{X}$   
 $28^\circ = \frac{1}{2} m \widehat{X}$   
 $56^\circ = m \widehat{X}$

$36 + 36 + 90 + 56 + y = 360^\circ$   
 $y = 142^\circ$

$\angle 1$  INSCRIBED  
 $m\angle 1 = \frac{1}{2} m \widehat{ARC}$   
 $m\angle 1 = \frac{1}{2} (72^\circ)$   
 $m\angle 1 = 36^\circ$

$\angle 2$  INSCRIBED  
 $m\angle 2 = \frac{1}{2} m \widehat{y}$   
 $= \frac{1}{2} (142^\circ)$   
 $m\angle 2 = 71^\circ$

$m\angle 4 = \frac{1}{2} m \widehat{INSCRIBED}$   
 $= \frac{1}{2} (178^\circ) = 89^\circ = m\angle 4$

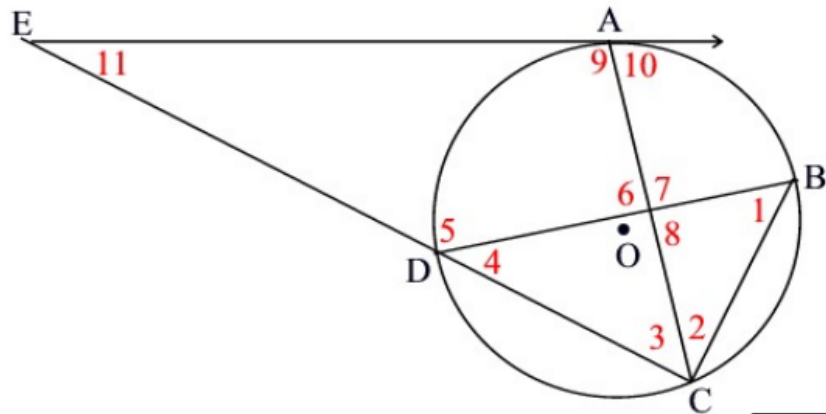
$m\angle 5 = \frac{1}{2} m \widehat{INSCRIBED}$   
 $= \frac{1}{2} (56^\circ)$   
 $m\angle 5 = 28^\circ$

INTERIOR  
 $m\angle 3 = \frac{1}{2} (78^\circ + 90^\circ)$   
 $= \frac{1}{2} (268^\circ)$   
 $m\angle 3 = 134^\circ$



Circle O with no diameters shown.  $\overrightarrow{EA}$  is tangent at point A.

$$m\widehat{AB} : m\widehat{BC} : m\widehat{CD} : m\widehat{DA} = 3 : 3 : 4 : 5$$



- $m\angle 1$  \_\_\_\_\_
- $m\angle 2$  \_\_\_\_\_
- $m\angle 3$  \_\_\_\_\_
- $m\angle 4$  \_\_\_\_\_
- $m\angle 5$  \_\_\_\_\_
- $m\angle 6$  \_\_\_\_\_
- $m\angle 7$  \_\_\_\_\_
- $m\angle 8$  \_\_\_\_\_
- $m\angle 9$  \_\_\_\_\_
- $m\angle 10$  \_\_\_\_\_
- $m\angle 11$  \_\_\_\_\_