

# Circles: Angles and Arcs



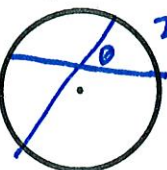
	<p>∠O is a central angle.  <b>Central Angle</b>  <b>Angle = Arc</b></p>		<p>∠E is an inscribed angle.  <b>Arc = 2 Angle</b>  <b>Angle = <math>\frac{\text{Arc}}{2}</math></b></p>
	<p>∠HKI &amp; ∠LJK are chord-chord angles.  <b><math>\frac{\text{Arc 1} + \text{Arc 2}}{2}</math></b>  <b>∠ = <math>\frac{\text{Arc 1} + \text{Arc 2}}{2}</math></b></p>		<p>∠U is a tan-chord angle.  <b>Inscribed Angle</b></p>
	<p>∠Q is a <u>tan-secant</u> angle.  <b>∠ = <math>\frac{QS}{2}</math></b></p>		<p>∠P is a <u>tan-tan</u> angle.  <b>PR PC</b></p>
		<p>∠Z is a <u>secant-secant</u> angle.  <b><math>\frac{2L + 3M}{2}</math></b>  <b>Big-Little = <math>\frac{\text{Arc}}{2}</math></b></p>	

Write whether the angle is central, inscribed, chord-chord, secant-secant, tan-tan, tan-chord or tan-secant.

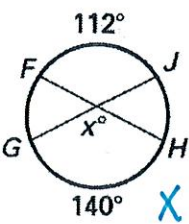
<p>∠P <input type="text"/></p> <p>∠D <input type="text"/></p> <p>∠PBC <input type="text"/></p> <p>∠BCD <input type="text"/></p> <p>∠CBD <input type="text"/></p>		<p>6. ∠O <input type="text"/></p> <p>7. ∠K <input type="text"/></p> <p>8. ∠W <input type="text"/></p> <p>9. ∠RVM <input type="text"/></p> <p>10. ∠ZVM <input type="text"/></p>	
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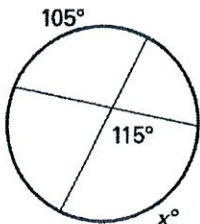
Name: \_\_\_\_\_ Date: \_\_\_\_\_

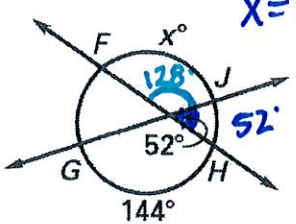
**Angles - Vertex Inside & Outside**

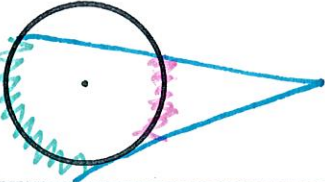
vertex is on the <b>CENTER</b> of the circle	Central $\text{Angle} = \text{Arc}$	
vertex is on the <b>EDGE</b> of the circle	Inscribed $\text{Arc} = 2 \text{ Angle}$ $\text{Angle} = \frac{\text{Arc}}{2}$	
vertex is <b>INSIDE</b> of the circle	Angles formed by <b>CHORDS</b> $\theta = \frac{A1 + A2}{2}$	

Solve for x:

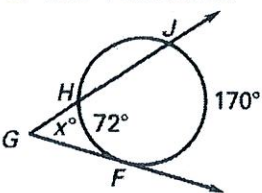
1.   $x = \frac{112 + 140}{2}$   
 $x = 126$

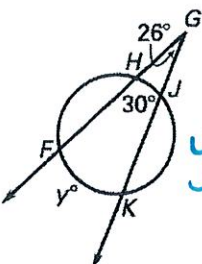
2.   $x = 125$   
 $2 \cdot 115 = \frac{x + 105}{2} \cdot 2$   
 $230 = x + 105$

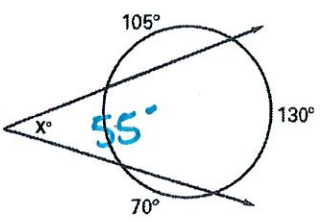
3.   $x = 112$   
 $2 \cdot 128 = \frac{x + 144}{2} \cdot 2$   
 $256 = x + 144$

vertex is <b>OUTSIDE</b> of the circle	Secant / Tangent $\frac{\text{Big} - \text{Little}}{2} = \theta$	
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Solve for the variable:

4.   $\frac{170 - 72}{2} = x$   
 $49 = x$

5.   $y = 82$   
 $2 \cdot \frac{y - 30}{2} = 26 \cdot 2$   
 $y - 30 = 52$

6.   $\frac{130 - 55}{2} = x$   
 $37.5 = x$