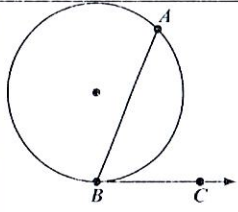
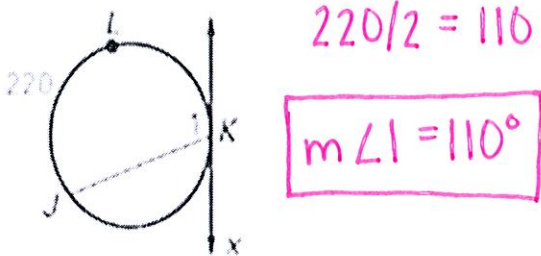


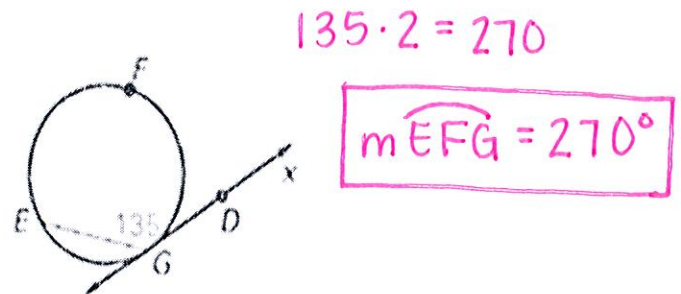
## Day 3 – Secant and Tangent Angles (Vertex On, Inside & Outside)

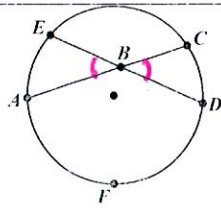
Name	Theorem	Hypothesis	Conclusion
<b>Tangent Chord Theorem</b> <u>(Vertex ON)</u>	If a tangent and a chord intersect at a point on the circle, then the measure of each angle formed is one half the measure of its intercepted arc.		$m\angle ABC = \frac{1}{2} m\widehat{AB}$

**Example:** Find the measure of angle 1.

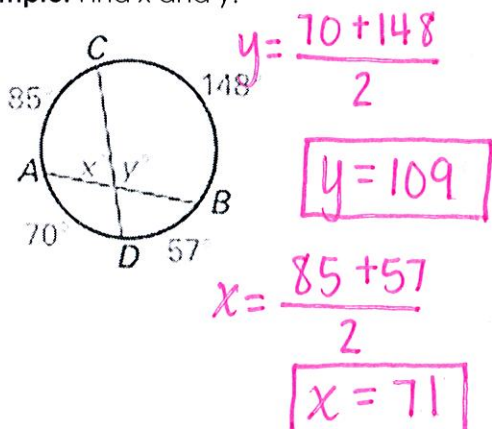


**Example:** Find the measure of arc EFG.

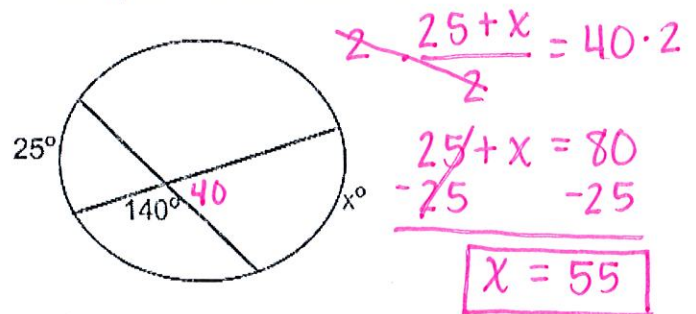


Name	Theorem	Hypothesis	Conclusion
<b>Interior Angles of a Circle Theorem</b> <u>(Vertex INSIDE)</u>	If two chords intersect <b>inside</b> the circle, then the measure of each angle is half the sum of the measures of the arcs intercepted by the angle and its vertical angle.		$m\angle EBA \text{ or } m\angle CBD = \frac{\widehat{EA} + \widehat{CD}}{2}$  OR $\text{Angle} = \frac{\text{Arc} + \text{Arc}}{2}$

**Example:** Find x and y.



**Example:** Find the value of x.



Name	Theorem	Hypothesis	Conclusion
<p><b>Exterior Angles of a Circle Theorem (Vertex OUTSIDE)</b></p>	<p>If a tangent and a secant, two tangents, or two secants intersect <b>outside</b> the circle, then the measure of the angle formed is half the difference of the measures of the intercepted arcs.</p>		<p><math>m\angle DBA = \frac{\widehat{DFA} - \widehat{DA}}{2}</math></p> <p>OR</p> <p>Angle = <math>\frac{\text{Big} - \text{Small}}{2}</math></p>

Example: Find the value of x.

Example: Find the value of x.

$x = \frac{115 - 25}{2}$

$x = 45$

$2 \cdot \frac{70 - x}{2} = 27 \cdot 2$

$70 - x = 54$

$-x = -16$

$x = 16^\circ$

Example: Find the value of x.

$2 \cdot \frac{(17x + 6) - (7x - 2)}{2} = 39 \cdot 2$

$(17x + 6) - (7x - 2) = 78$

$17x + 6 - 7x + 2 = 78$

$10x + 8 = 78$

$10x = 70$

$x = 7$