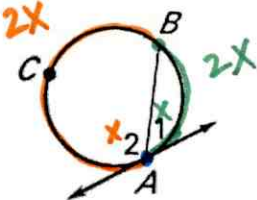
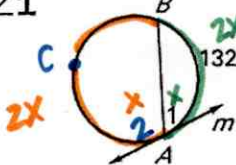
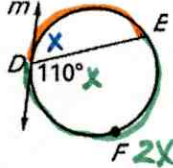

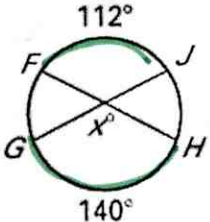
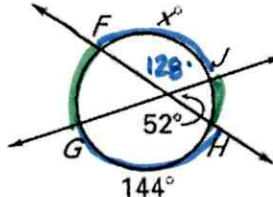


Apply other Angle Relationships in Circles

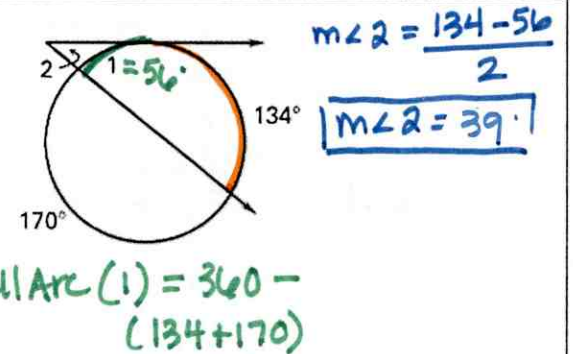
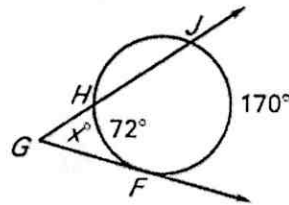
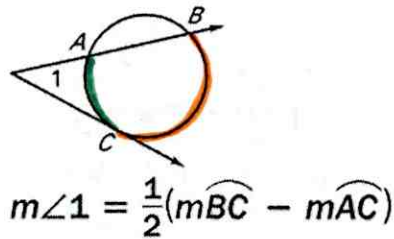
Vocabulary	Definition	Example
<p>THEOREM 10.11</p> <p>Tangent and chord</p>	<p>If a tangent and a chord intersect at a point on a circle, then the measure of each angle formed is one half the measure of its intercepted arc.</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p><math>m\angle 1 = \frac{1}{2} \widehat{AB}</math></p> <p><math>m\angle 2 = \frac{1}{2} \widehat{ACB}</math></p> <p><math>m\angle 1 + m\angle 2 = 180</math> LP</p> <p><math>m\widehat{AB} + m\widehat{ACB} = 360</math></p> </div> <div style="text-align: center;"> <p>a. <math>m\angle 1</math></p>  <p><math>m\angle 1 = 132/2</math></p> <p><math>m\angle 1 = 66</math></p> <p><math>m\angle 2 = 180 - 66</math></p> <p><math>m\angle 2 = 114</math></p> <p><math>m\widehat{ACB} = 2(114)</math></p> <p><math>m\widehat{ACB} = 228</math></p> </div> <div style="text-align: center;"> <p>b. <math>m\widehat{EFD}</math></p>  <p><math>m\widehat{EFD} = 2(110)</math></p> <p><math>= 220</math></p> <p><math>m\widehat{ED} = 360 - 220</math></p> <p><math>= 140</math></p> <p><math>x = \frac{140}{2}</math> or <math>180 - 110</math></p> <p><math>x = 70</math></p> </div> </div>
<p>THEOREM 10.12</p> <p>ANGLES INSIDE THE CIRCLE</p> <p>THEOREM</p> <p>2 chords</p>	<p>If two chords intersect <i>inside</i> a circle, then the measure of each angle is <u>one half the sum</u> of the measures of the arcs intercepted by the angle and its vertical angle.</p>	<p>Find the value of x.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p><math>m\angle 1 = \frac{1}{2}(m\widehat{AB} + m\widehat{DC})</math></p> <p><math>m\angle 2 = \frac{1}{2}(m\widehat{AD} + m\widehat{BC})</math></p> <p><math>m\angle 1 + m\angle 2 = 180</math> LP</p> </div> <div style="text-align: center;">  <p><math>x = \frac{112 + 140}{2}</math></p> <p><math>x = 126</math></p> </div> <div style="text-align: center;">  <p><math>128 = \frac{x + 144}{2}</math></p> <p><math>256 = x + 144</math></p> <p><math>x = 112</math></p> <p><math>180 - 52 = 128</math></p> </div> </div>

THEOREM 10.12  
ANGLES OUTSIDE  
the CIRCLE  
THEOREM

If a tangent and a secant, two tangents, or two secants intersect *outside* a circle, then the measure of the angle formed is one half the difference of the measures of the intercepted arcs.

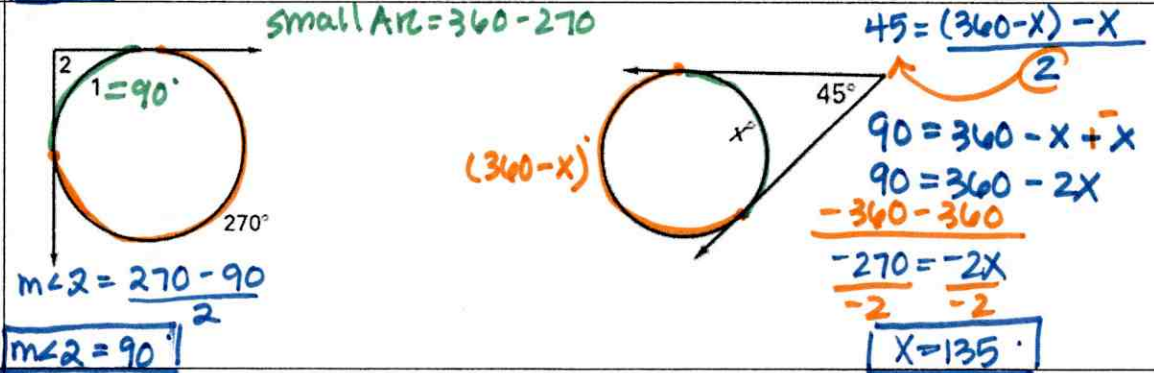
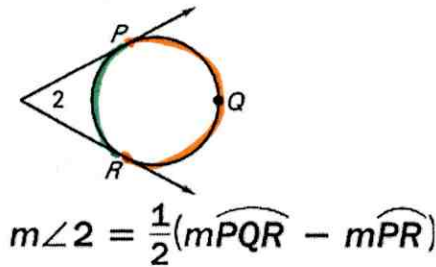
$$m(\text{angle on the outside}) = \frac{(\text{Big Arc} - \text{Small Arc})}{2}$$

TANGENT and a  
SECANT



TWO TANGENTS

Small arc and  
exterior angle are  
Supplementary



TWO SECANTS

