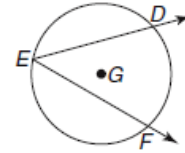


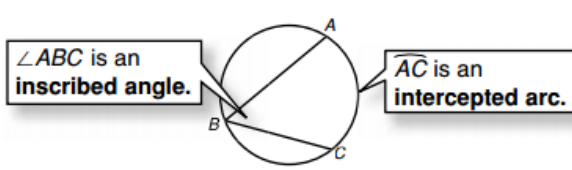
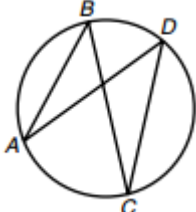
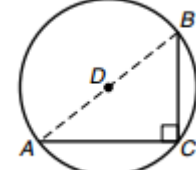


- I can find the measures of inscribed angles of a circle.
- I can find the angle measures of inscribed quadrilaterals.

Inscribed Angles

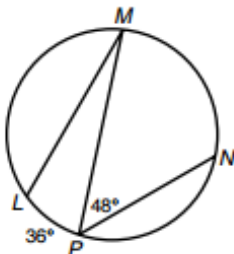
An **inscribed angle** is an angle whose vertex is on a circle and whose sides contain chords of the circle. In $\odot G$, inscribed $\angle DEF$ intercepts \widehat{DF}



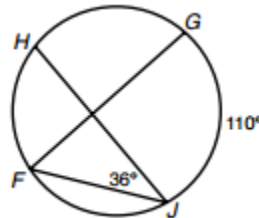
| | | |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Inscribed Angle Theorem</p> | <p>If an angle is inscribed in a circle, then the measure of the angle equals one-half the measure of its intercepted arc.</p> |  <p>$m\angle ABC = \underline{\hspace{2cm}}$</p> |
| <p><i>Theorem 10.8</i></p> | <p>If two inscribed angles of a circle intercept the same arc, then the angles are congruent.</p> |  <p>$\angle ABC$ and $\angle ADC$ intercept \widehat{AC}, so _____</p> |
| <p><i>Theorem 10.9</i></p> | <p>An inscribed angle subtends a semicircle if and only if the angle is a right angle.</p> |  |

Example 1: Using Inscribed angles to find angle and arc measures in circles.

a) Find $m\angle LMP$ and $m\widehat{MN}$

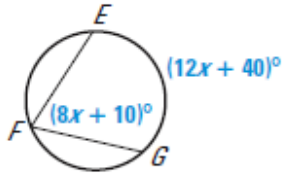


b) Find $m\angle GFJ$ and $m\widehat{FH}$

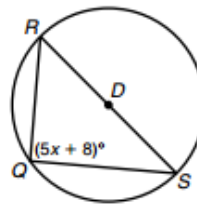


Example 2: Finding measures of inscribed angles – Using Algebra

a) Find $m\angle EFG$.

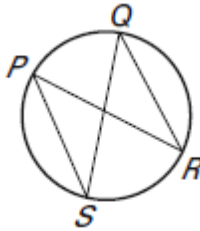


b) Find x .

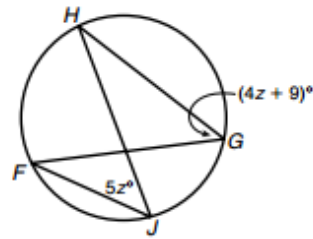


Example 3: Using congruent inscribed angles

a. Name two pairs of congruent angles in the figure.

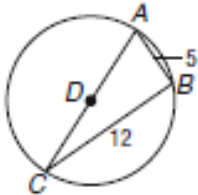


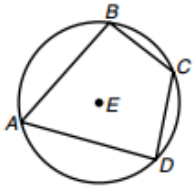
b. Find $m\angle FJH$.



Example 4: Using Inscribed Triangles

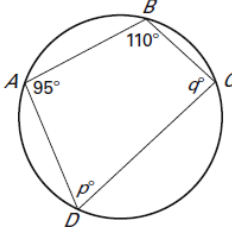
Find AD.



| | | |
|-----------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><i>Theorem 10.10</i></p> | <p>A quadrilateral can be inscribed in a circle if and only if its opposite angles are supplementary.</p> |  <p>$\angle A$ and $\angle C$ are supplementary. $\angle B$ and $\angle D$ are supplementary. <i>ABCD</i> is inscribed in $\odot E$.</p> |
|-----------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Example 5: Using Inscribed Quadrilaterals

a) Find the value of each variable.



b) Find the measure of each angle.

