10.4 Circles: Use Inscribed Angles and Polygons

Inscribed Angle: an angle whose vertex is on the circle and whose sides are chords of the circle

Theorem 10.7: Inscribed Angle Theorem

If an angle is inscribed in a circle, then the measure of the angle equals one-half the measure of its intercepted arc (the arc it opens up to).

Theorem 10.8

If two inscribed angles of a circle ( or congruent circles) intercept congruent arcs or the same arc, then the angles are congruent.

A polygon is an inscribed polygon if all of its vertices lie on a circle. The circle that contains the vertices is a circumscribed circle.

Theorem 10.9

If a right triangle is inscribed in a circle then its hypotenuse is a diameter.

If one side of an inscribed triangle is a diameter, then it’s a right triangle.

Theorem 10.10

If a quadrilateral is inscribed in a circle, then its opposite angles are supplementary.