

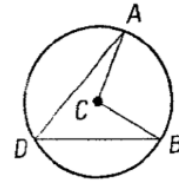
Unit 6.4

Inscribed Angles

Inscribed angle Theorem

If an angle is inscribed in a circle, then its measure is half the measure of its intercepted arc.

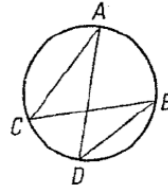
$$m\angle ADB = \frac{1}{2} m\widehat{AB}$$



Inscribe to same arc Theorem

If two inscribed angles of a circle intercept the same arc, then the angles are congruent.

$$\angle C \cong \angle D$$

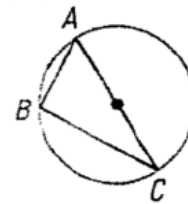


Right angle inscribed angle Theorem

If a right triangle is inscribed in a circle, then the hypotenuse is a diameter of the circle.

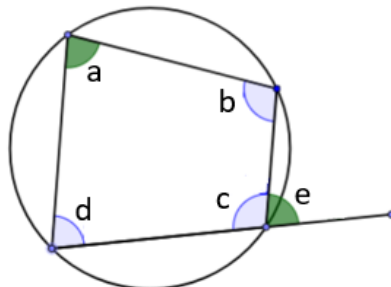
Conversely, if one side of an inscribed triangle is a diameter of a circle, then the triangle is a right triangle and the angle opposite the diameter is the right angle.

$\angle B$ is a right angle if and only if AC is a diameter of the circle.



Cyclic Quadrilateral

A cyclic quadrilateral has all its vertices on the circumference of the circle.



Opposite angles add up to 180°

$$\angle a + \angle c = 180^\circ$$

$$\angle b + \angle d = 180^\circ$$

Exterior angle is equal to

the interior opposite angle

$$\angle a = \angle e$$