

# Inscribed Angles

$\sin 60^\circ = \frac{18\sqrt{3}}{x}$   
 $x = \frac{18\sqrt{3}}{\sin 60^\circ}$

title

Feb 10-8:26 AM

Inscribed angle—an angle whose vertex is on a circle and whose sides contain chords of the circle

Intercepted arc—the arc that lies in the interior of an inscribed angle and has endpoints on the angle

inscribed angle

**Measure of an Inscribed Angle Theorem**

The measure of an inscribed angle is one half the measure of its intercepted arc.

**Theorem**

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

thms

Find the measure of the indicated angle or arc in circle P.

$m\angle RTS = 24^\circ$

$m\widehat{TQ} = 100^\circ$

$m\angle RQT = 90^\circ$

$m\angle QST = 50^\circ$

$m\widehat{QS} = 128^\circ$

examples

Inscribed polygon—a polygon whose vertices all lie on a circle

Circumscribed circle—a circle that contains the vertices of an inscribed polygon

**Theorem**  
A quadrilateral can be inscribed in a circle if and only if its opposite angles are supplementary.

inscribed polygons

Find the values of the variables.

$x + 87 = 180$   
 $x = 93^\circ$   
 $4y + 112 = 180$   
 $4y = 68$   
 $y = 17$

$2x + 58 = 180$   
 $2x = 122$   
 $x = 61$   
 $5y + 115 = 180$   
 $5y = 65$   
 $y = 13$

$\frac{151 + 79}{2}$   
 $\frac{79 + 51}{2}$

examples

**Conclusion**

1. What is the measure of an inscribed angle of a circle?  
 $\frac{1}{2}$  arc
2. What has to be true for a quadrilateral to fit in a circle?  
opp  $\angle$ s supp
3. Questions?????

**Assignment**  
**Inscribed Angle Wkst**

Feb 9-8:01 AM