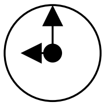
[45 minute lesson]

United States Public Release Lesson 4 Lesson Graph [8th grade]



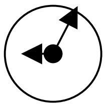
4 1/2 minutes

Private Class Work: Reviewing the Previous Work

Students get their materials for the lesson ready, and then work on the following "problem of the day":

Tell about these in your own words

1) Inscribed angle theorem 2) right angle corollary 3) arc intercept corollary



26 minutes

Public Class Work

Problem of the day results

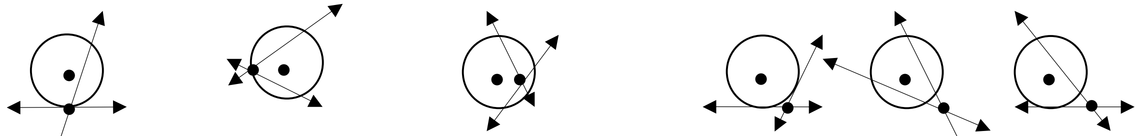
Inscribed angle theorem –Suzy: "If an angle's inscribed in a circle and it intercepts part of the circle, then the angle's measure is equal to half of the other angle."

Right angle corollary –Matt: "If an inscribed angle intercepts a semicircle, the angle is a right angle."

Arc intercept corollary – Margaret: "When you have two inscribed angles and they intercept the same arc, they have the same measure."

Review of Angles formed by Secants and Tangents

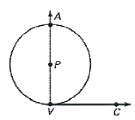
Vertex on the circle | **Vertex is inside the circle** | **Vertex outside the circle**

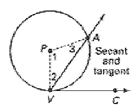


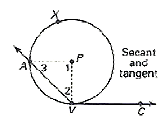
Secant &Tangent | Two Secants | Two Secants | Two Tangents | Two Secants | Secant & Tangent

Homework Problems

secant and tangent intersecting on a circle







m∠AVC=90

$m\overset{\frown}{AV}$=180

∠AVC is an acute angle

$m\overset{\frown}{AV}$	m∠1	m∠2	m∠PVC	m∠AVC
120°	120°	30°	*90°*	60°
x°	*x°*	*(180°-x°)÷2*	*90°*	*x°÷2*

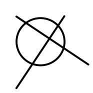
∠AVC is an obtuse angle

$m\overset{\frown}{AXV}$	m∠1	m∠2	m∠PVC	m∠AVC
200°	160°	10°	*90°*	100°
x°	*160°-x°*	*(180°-m<1)÷2*	*90°*	*x°÷2*

Theorem: If a tangent and a secant (or a chord) intersect on a circle at the point of tangency, then the measure of the angle formed is half the measure of its intercepted arc – regardless of whether the angle is right, acute, or obtuse.

Two secants intersecting inside a circle

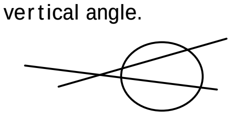
$m\overset{\frown}{AC}$	$m\overset{\frown}{BD}$	m<1	m<2	m<AVC	m<DVB
160°	40°	80°	20°	100°	100°
180°	70°	*90°*	*35°*	*125°*	*125°*
X_1°	X_2°	*mAC÷2*	*mBD÷2*	*(mAC+ mBD) ÷2*	*(mAC+ mBD) ÷2*



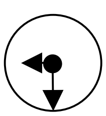
Theorem: The measure of an angle formed by two secants or chords that intersect in the interior of a circle is half the *sum* of the measures of the arcs intercepted by the angle and its vertical angle.

Two secants intersecting outside a circle

$m\overset{\frown}{BD}$	$m\overset{\frown}{AC}$	m<1	m<2	m<AVC
200°	40°	100°	20°	80°



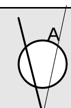
Theorem: The measure of an angle formed by two secants that intersect in the exterior of a circle is half the *difference* of the measures of the intercepted arcs.



3 1/2 minutes

Private Class Work: Example One

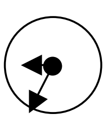
Given: m <AVC=60°, m AC=130°, find m $\overset{\frown}{BD}$



1 1/2 minutes

Public Class Work

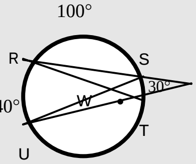
A student puts the answer to example one on the overhead: (130°–x°)/2 = 60, 130°–x°=120°, x=10°, BD=10°



6 minutes

Private Class Work: Example Two

Given: m $\overset{\frown}{UR}$=140°, m $\overset{\frown}{RS}$=100°, m $\overset{\frown}{ST}$=30°,
Find m <RSU, m <RVU, m <USV, m <RWS
(W is the point inside the circle.)



3 1/2 minutes

Public Class Work

Students give answers to example two: m <RSU= 70°, m <RVU=55°, m <USV=110°, m <RWS=95°.

The teacher reminds students to study for their final exam tomorrow.